

THE
SOUTHERN AGRICULTURIST.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XLIV.—*Anniversary Address, delivered before the Horticultural Society of Charleston, July 10, 1834; by HENRY R. FROST, M. D.*

What task can be assigned more in harmony with the feelings of this Society, than to descant upon the beauties of nature; or where shall we look for a theme more ennobling. Year after year have we watched the vegetable tribe springing into existence, exhaling their rich perfumes and sweets, providing for their propagation, and again returning to the bosom of the earth. These operations are so uniform and unvarying, that we have ceased to wonder, and are content to consider them among the settled laws of nature. Can a portion, therefore, of our time be better employed than in bringing to the recollection the beauties of spring, the pleasures of the flower garden, and the contemplation of "God's own temple, whose pavement we tread, and whose dome is stretched above us." This, then, is the season of our jubilee, and thankful should we be, that we have been permitted to experience another year its various and inspiring pleasures.

If the heathens appropriated certain seasons for their festivals, in honour of their presiding divinities, and the Jews of old, their feast of tabernacles, and others, in commemoration of the fruitful year, how much more should we in a civilized age, and in a Christian land render up

our *orisons* for the comforts we experience, and the many enjoyments provided for us.

On a theme so fruitful, how shall I best engage your attention. Shall I carry you back to the early ages of man, to the garden planted in Eden, the scene of his elevation and fall; or paint to you the pleasures which under its alluring imagery were to be the emblems of that final bliss reserved for him, where amidst, fragrant bowers, cooling streams, and refreshing fruits, the faithful were to enjoy happiness hereafter. Shall I bring to your recollection the hanging terraces of Babylon, monuments of arts, and of the luxuriance of nature, erected by a celebrated queen, and which remained for ages the wonder and admiration of the world. Should fancy wing her flight and wander in classic grounds, what pleasures might not be drawn from the beautiful descriptions which have been given, of the gardens of Alcinous and Laertes, of the vale of Tempe, and the grotto of Calypso.

Such subjects call for more inspired pens, and you will bear with me while I proceed to *describe* the *pleasures* which follow in the train of Flora, and some of the most remarkable *peculiarities* of the vegetable kingdom.

To him whose mind is alive and open to the beauties of nature, how animating and instructing is the scene which is presented,—how much is furnished for delight and admiration in any one of the many objects so profusely scattered. From the simplest to the most complex of structures, from the feeblest to the most vigorous, all exhibit a Providence watching with tender care, and ordering all things for the happiness of his creatures.

If we examine the different *colours* observable in flowers, how many are the beauties—what a lovely assemblage do we behold, how pleasing and diversified in their mixture, how admirably are the shades distributed. There a light pencil seems to have laid them on—here they are blended according to the nicest rules of art.* By what means has the structure been so ordered and arranged, as to present to us so many tints. Who can explain it—who will attempt to imitate it. The Pink is different from the Rose—the Rose from the Tulip—the Tulip from the Hyacinth—the Hyacinth from the Lily—yet each has its peculiar beauties. In every bed of Tulips, and on every

* Sturm's Reflections.

rose-bush, each has something its own, each presents an assemblage of colours at once novel, pleasing, even wonderful.

In one flower we see the Ruby with its bleeding radiance, in another the Sapphire with its sky tintured blue—in all, such an exquisite richness of dyes as no paintings can boast.*

“ Who can paint—
Like nature—can imagination boast
Amid its gay creation hues like these ?
And can it mix them with that matchless skill,
And lay them on so delicately fine,
And lose them in each other, as appears
In every bud that blows. THOMPSON.”

Who can pourtray their many beauties. The queen of Sheba being induced by the fame of the great Hebrew King, to visit his court, and to be instructed in knowledge, was entertained in a manner suited to his wealth and character. The floors of his palace were of silver, and upon them bright Assyrian carpets were spread. The walls and ceiling were of gold, and hung round with silk and rich embroidery, and Babylonish tapestry of Hiram's princely dye—with Ophir's starry stones;† yet with all that wealth could furnish, “Solomon in all his glory was not arrayed like one of these.”

Next to the beauty of colours is the *variety* and the *succession* of flowers. As winter retires, and the cold blasts retreat to the caves where Virgil so beautifully confines them, the flowering tribe make their approach—at first, few and scattered, they seem at once courting attention and struggling for existence. With heads bent to the earth they urge their progress, struggling into life, and protecting their more tender parts from the violence of the winds and rain. As the genial heats increase, they become erect, and unfolding all their charms claim the traveller's regard.

The Snow drop first presents itself,—forcing its way through the frozen ground, comes forth, a glad harbinger to announce that the reign of winter draws to an end. Like the dove with the olive branch, it declares that the ice-bound chains in which nature has been fettered, are about to be dissolved—that she will again revive, and appearing in all her beauty, and majesty, and loveliness,

* Reflections on a Flower Garden.

† Cowley.

once more delight the eye, once more renew the fruits of the earth.

The Crocus next peeps forth—less bold than its predecessor. It unfolds its petals with caution, slowly and with reluctance pushes forth its flowering stem, eager to draw from the earth all of the warmth and of the nutriment it can afford. While the elements continue unsettled, and the rough winds howl, it nestles within the retreat its leaves afford, and waits more genial seasons to raise its head.

The Violet next with characteristic modesty presents itself. With drooping crest and retiring habits, it shuns observation, while from its bosom there exhales rich odours and sweets, perfuming the air, and delighting the senses—an emblem expressive of those modest virtues which bloom in obscurity.

The favourite of Venus next appears, combining all that is graceful in form, beautiful in colouring, or agreeable in perfume. The charming Rose, no longer will it in confinement remain, but rising to light, displays such perfections as crown it the glory of the spring. Who shall describe its many beauties—its fragrance, the sweetest incense of the skies—who the many purposes for which it in fabled song, and in tuneful lays, the Rose has been celebrated. Whether as the representative of Love, “over whose crimson leaves dissolving sweets are showered to steal the soul away,” as a decoration for the bride, to be entwined among her tresses, or to sleep upon her bosom, or as the emblem of the sex itself, soft, engaging, beautiful—

“ Behold how lovely blooms the vernal rose,
When scarce the leaves her early bud disclose,
When half enwrapt, and half to view revealed,
She gives new pleasures from her charms concealed.”

To this shining embassy of the year succeeds the Tulip. Where in a form more delicate can we discover a greater perfusion of colours, or greater splendour. Could any mercer among all his patterns exhibit any thing half so rich and beautiful, as is to be found in a single flower, or any artist in the mixture of light and shade, rival its perfections. Nature in a sportive mood would seem to have laid them on, and to have indulged her humour in dressing this “the fop of flowers.”

To these, other flowers succeed as the warm season advances. In no one respect do we see more cause of gratitude, than in the regular rotation with which flowers, "the stars of the earth;" make their approach. Each has its appointed period, each in its turn comes forward to decorate the surface of our globe, to cheer the heart of man, and to crown the glories of the revolving year.

Not more remarkable are all these, than the wisdom and power we see exhibited in the structure of the vegetable kingdom. Where shall we find a greater variety? Consider their number—no less than 30,000 species known and described, all differing from each other, all formed with the utmost skill and harmony, all performing their functions with the utmost regularity. Not more remarkable are all these, than the unvarying arrangement of some of its parts; the flower presenting a similar structure of the corolla, calyx, filaments, and seed vessel, not only through a series of years, but of centuries.

The pleasures following in the train of Flora, and I would add Pomona, have engaged the attention, and been the subject of eulogy in all ages. Hesiod and Homer have sung their praises; Virgil could compose his eclogues beneath shady and cool retreats. Names illustrious in the literature of our language are not wanting. In Britain, the ingenious Bacon, the philosophic Evelyn, and the poetic Cowley. To these, we may add, Milton, Addison, and Pope—Thompson, Darwin, with many others.

There is, also, the sanction of high names, and of bright examples in other countries. In France, we recognize a Buffon, a De Lile, a Saint Pierre. In Switzerland, a Conrad Von Gessner, and in Sweden, the renowned Linnæus.* That such men have been engaged in the pursuits we have met to celebrate, would give dignity to our subject, and excite sympathy of every generous mind.

But why should I appeal to the authority of names to give support to this interesting subject. Who is there that does not admire "these delicate daughters of the sun," who does not love flowers? They embellish our gardens, they are the interpreters of our affections, they are the testimonials of our gratitude; we strew them in the path of the bride, and we decorate her person with these emblems of purity and innocence. They give a lus-

* Schroeder's *Address*.

tre to our festivals, they add to the pomp of our religious ceremonies, and when the grave closes upon all we esteem dear, who does not feel that the spot is hallowed by these tokens of tenderness and of love.

Their cultivation is often connected with pursuits of the most exalted character. We are told, that Des Cartes prosecuted with equal ardour, Astronomy, and the culture of flowers. The great Condé devoted his leisure hours to this delightful pastime, and the vase of flowers was daily renewed upon the table of Lord Bacon, while composing the volumes of his sublime philosophy.*

The moral pleasures we derive from gardens, are no less deserving of consideration. Here, where all is silent and sweet, does not the muse of contemplation delight to dwell. Here, when the spirits are exhausted, and the heart has been sickened, and the temper soured by the contending passions of the world, can we retire and be at rest. Here, while the senses are regaled, and the tumults of the bosom lulled by the calmness and quiet which pervade the scene, a spirit of devotion steals upon us, and in the communion which we hold with the works of nature, we are led to the contemplation of the God of Nature. It was in the garden of Gethsemene, that the Saviour himself retired, and in a strain of agony, such as no mortal ever experienced, poured forth his whole soul in devout aspirations to the Father of Mercies. It was in the shades and green retreats of the Academus, that Socrates and Plato inculcated the principles of philosophy, and taught the youth of Athens how she was to be wooed and won. It was in the fair Lycæum's walk, that the celebrated Aristotle propounded his doctrines, which rendered him the ornament of his own age, and the instructor of posterity; even Epicurus, who taught that pleasure was the chiefest good, in a garden's shade that pleasure taught.

The moral reflections excited by our subject, are no less deserving of consideration, as they relate to man's own condition.

Among the purposes to which gardens were applied in ancient times, was that of a depository for the dead. Who does not call to mind the affecting passage—"there was a garden, and in that garden was a sepulchre." What situation is more adapted for the reception of those, who hav-

* *Encyclopædia Americana.*

ing spread a fragrance, and the sweet perfume of good works, have fallen into sleep. They have, like the flower, only changed their state, and in a situation where they are born anew—like the seed, they are again returned to the earth, exulting in the glorious hope,

“ Shall I be left forgotten in the tomb,
When fate relating bids the flower revive.”

What is there more calculated to move our wonder and excite surprise, or what serves as a better emblem of man's own condition. That which was sown a seed, dead and inanimate to all appearances, shall in a little time grow into a tree. Whence takes it its increase, and whence its birth. The same power which has ordained that such things shall be.

How unlike to the seed is the future plant, how inconceivable that in the *embryo* which we so carelessly commit to the earth, there should yet exist so small a portion of that principle we call life, that when warmed by the sun, and nourished by the earth, and sustained by the air, shall produce leaves, and branches, and fruit.

Gardening bears no inapt relation to education, and the parallel might be extended; but having engaged your time sufficiently on this division, I proceed to others—but not without a word at parting.

The Emperor Dioclesian, having resigned the reins of power, retired to his farm at Salona, where he devoted himself to the pursuits of gardening. When urged by ambassadors from his successor Maximilian, to resume the government and imperial purple, nobly replied—that if their master could be shown the flowers he had planted with his own hands, he would no longer be solicited to relinquish the enjoyment of happiness for the pursuit of power.

“ If I my friends (said he) should to you show
All the delights which in these gardens grow,
It is likelier much that you would with me stay,
Than 'tis that you should carry me away.

COWLEY.

(To be continued.)

ART. XLV.—*On the Use of Rice*; by AN EXOTIC.

" December 3, 1833.

Mr. Editor,—Sometime ago, I believe, the Commissioners of the United States' Navy, were directed to inquire into the practicability of a more extensive use of rice on board ship, than is now or was then practised. I believe they reported unfavourably, introducing as one evidence in their report, the prejudice of sailors against it, who, it is said, believe it to be the cause of the numerous cases of blindness which are said to occur on board East-India vessels. This charge cannot be sustained whenever a list of the diseases of Charleston are referred to, as there is no country in the world where more rice is consumed than the lower parts of Carolina, and no where are diseases of the eyes so rare.

Rice is an article that can be applied to a great variety of uses; if a more general knowledge of its preparation for food as used at the South, and its medicinal qualities were published, it would be sought after in those countries where wheat, rye and oats, are grown and used in common, and it would be substituted for these, more especially by the invalid.* Its use aboard ships and in an army, entitle it to the earliest consideration; requiring but little water, fuel and time, it is readily made into a delightful dish, either as bread, pudding, or diet for the sick. The following process can readily and economically convert raw rice into an acceptable substitute for hard biscuit, musty bread and sea pies.

To cook and serve up rice with meat as bread or vegetables.—Rub a quart of rice roughly with the hand in a bucket of water, (sea-water will do if necessary) then rinse the rice in fresh water, which when poured off will do for poultry and pigs;† put the washed rice in a quart of boiling water or more, with a seasoning of salt; ten minutes brisk boiling will be sufficient; then drain or

* "Among the common kinds of grain, rice is accounted the mildest and most nutritious, and is supposed to be particularly serviceable in dysenteries and diarrhœas. It is less vicious than wheat, or of less tenacity, when boiled with water."—*Rees' Cyclopædia*.

† Rough rice is the best food for fattening poultry, especially where the facility is wanting of obtaining rough pieces of brick, shell, stone or charcoal to assist digestion. No hen fed on it can lay idle.

dip off the water or gruel, leaving a small portion for steaming; place the pot, well covered, on moderately heated coals, (a blaze will burn the rice) ten minutes soaking or steaming in this way, and the rice will be well done, and fit to dish up.

Rice should be done quickly like a beef-steak, the grain will then remain perfect and retain all its flavour; but to boil rice any length of time, as I have seen it cooked by those who do not understand it, puts me in mind of a cook whose master complained of always having hard boiled eggs, brought to table, "Sir," says she "all the boiling I can give them, I cannot make them soft, and I have tried my best to please you." The flavour of rice is destroyed by too much boiling, or remaining too long in the pot, before it is brought to table, or suffering too much water to remain when it is put to steam, this makes it tasteless, watery or gluey. The gruel which is drained off, previous to steaming, is used for thickening stews, sauces and is wholesome for the sick, or may be advantageously given to the live stock of the ship. Thus scarcely a particle of water is lost, except what the grain absorbs, which increases its weight and bulk.* The gruel is also used by families as a substitute for starching clothes, &c. Those who are fond of seeing rice, when cooked, look very white, must repeat the rubbing and rinsing, changing the water three or four times. When water is scarce at sea, rice can be boiled by simply throwing the raw rice into the pot of fresh water, without the previous washing. It can be delightfully boiled in the liquor of beef, pork or fowl; thus saving fresh water and the salt seasoning. With the addition of black or red pepper and a little saffron, it makes the favourite dish of what the Turks call pillau. Rice left from one day's use is likewise used with egg, milk and sugar, and baked as a pudding; the flour, which can be ground in the most common corn mills, will make bread, cakes, waffles, journey-cake, &c. Another way to make it into flour is to wash the rice, drain it thoroughly from water, then beat it in a mortar, sift and dry the flour or it will mould.

In Liverpool, rice and potatoes are steamed in casks at the poor-houses, wood, being a non-conductor of heat,

* "If the quality of rice is good, half a pound steamed in a little more than a quart of water till it is quite dry and soft, gains two pounds, that is, four fifths in weight."—*Domestic Encyclopædia*.

consumes a very small quantity fresh water in the way of steam. On board of ships, steam may be as successfully produced by sea-water in place of fresh water. Finally, the most delicious loaf-bread is made from rice flour* mixed with wheat flour, receipts for which the reader can procure, by refering to Mease's Domestic Encyclopædia, articles—Bread and Rice.

Yours, &c.

AN EXOTIC.

ART. XLVI.—*Reflections and Suggestions of A RETIRED
PLANTER.*

No. 1.

It is now some years, Mr. Editor, since I have given up all agricultural pursuits, and have retired to the city to enjoy the little time, I have yet to remain in this world, in quietness and peace, among my friends. I still, however, revisit the scenes of my youth, and yearly pay a visit to some one or other of my friends or relations, and this has become so much of a habit, that I look forward with much pleasure, to the time I am to leave the dust and turmoil of the city, for the sweet and balmy air of the country. Although I now take no active part in agricultural pursuits, yet I cannot but feel a strong interest in the prosperity of my friends, (especially those who are bound to me by consanguinity,) and I enjoy a ride into the fields, and the inspection of crops as much as ever. To me, it is a source of true pleasure to witness the operations of a well conducted plantation, and I enjoy it the more now, as I have not to participate in the cares and troubles of conducting it, and see only the fair side. My age and experience in these matters, cause my opinions to be respected by my younger acquaintances, and whenever I can give a useful hint, it affords me pleasure to do

* "Two pounds of flour and six ounces of rice, produce four ounces weight more than three and a half pounds of flour.—*Domestic Encyclopædia.*

so. But in riding over many plantations, I see more to condemn than to admire, yet it would be invidious to be pointing out the faults of others. I can and do give my opinions and advice freely to my sons, but beyond that, I do not feel myself at liberty to go. Yet, still, I would gladly benefit all, whom I can, although I cannot be quixotic enough to enter personally into a contest with the feelings and prejudices of our planters, yet I have the vanity to think that, perhaps, I may do some good by occasionally dropping a hint or two through the medium of your journal. Which, as it will be addressed to no one in particular, will awaken no prejudices or unkind feelings, and as I shall moreover be *incog*, I can indulge more freely in my remarks. It is not my intention to pursue any regular plan, or to write for you at any certain period; my infirmities will not permit this. All I promise to do is merely to point out what appears to me to be some of the most glaring faults of our planters, and suggest such modifications or improvements as may strike me.

That which occurs to me at present, as a very glaring fault, is the too little attention paid to systematic arrangements on the plantation. On many that I have visited, it appears to me, that most of the work is done on the impulse of the moment, and that there is but little, if any, plan laid down for the operations generally. It is true, no plan or system can be followed implicitly, but yet, at the commencement of every year, or season, a planter should sit himself down, calculate his force and the work which he can execute with it, making in the first place due allowances for casualties, sickness and death. Having ascertained this, his next step should be, to apportion the crops properly, so that none will preponderate, that is, that a just proportion may be maintained between those raised for consumption, on the place, and those raised for market, because, if this be not observed, there will evidently be a loss,—for instance, should he grow more provisions than are necessary for the consumption of the plantation, he must sustain a loss, inasmuch, as the labour bestowed on this, would have increased his marketable crop. On the contrary, should he give an undue preference to the latter, and fall short of producing enough of the former for the home consumption, it is equally true, that he sustains a loss, unless preadventure, the first should

bear a high price in market, while provisions are low, a circumstance which does not often occur. I am aware that many of our planters deceive themselves by false calculations, and suppose they cannot do wrong, to plant as much cotton or other crops for market, as their force will permit, and plant only as much provision, as serves to fill up the intervals in working these crops, regarding the culture of provisions as altogether a secondary object, supposing that by the sale of a part of that which they have cultivated in lieu of it, they can purchase more than they could have produced on their plantation, and often they salve over the whole matter, by saying, "that their lands are not suitable for growing provisions, but produce excellent crops of cotton, and one acre of cotton is worth two or three of corn, even if their lands did produce it well."

But before we proceed any further, let us see how far they are right; for my part, I maintain that the whole is erroneous, both in theory and in fact. The calculations are founded on wrong data. The planter reasons thus: "it is necessary for me to have twenty acres of corn (besides potatoes) planted for the consumption of the place, at the utmost I cannot expect more than fifteen bushels per acre, and if the season is unfavourable, not more than ten, therefore put it down at the latter quantity to be on the sure side; this will then yield me two hundred bushels, I shall, therefore, want fifty bushels more, should the season prove bad, and as I cannot afford to give up any more land, I must necessarily purchase; but if I put one half of this in cotton, it will meet the whole expense, for, if the season is favourable for it, I shall get at least 150lbs. to the acre, which, at 20 cents, will be \$3000, and even if it is bad, I am almost sure of 100lbs. which will be \$20, and as I can usually buy corn from 50 to 60 cents, I shall not only be able to purchase what I need, but have something left after paying all expenses. But at the end of the season how stands the affair, caterpillars and storms, second growths, or other casualties have reduced the quantity from 150 to 75, perhaps to 50lbs to the acre, or the price has fallen from 20 to 17, to 15, and instead of paying 50 cents for his corn, he has to pay 75 cents, or perhaps, even a dollar per bushel, to which he has to add the expense of transportation, stealage, &c., so that in the end he finds instead of gaining, he has lost.

And should there be, as sometimes occur, an almost total failure of the cotton crop, then, indeed, is he in a pitiable plight. He becomes discontented and unhappy, and instead of finding his horses, oxen and stock in good order, you find them in a poor half starved condition, whilst it is ten to one, but his negroes share in the general privation, and if they are allowed their full allowances of grain, yet are stinted in the little extras which are usually given on most plantations, such as bacon, fish, molasses, &c. In fact, I have not as yet come across a single plantation, where it was habitually the custom to purchase provisions, but that every thing wore a bad appearance, and looked half starved, even though the proprietor might have been more fortunate than I have supposed—and this is easily accounted for. Having realized a certain sum from the sale of his crop, he is apt to think most of how much more property he can add to that which he already possesses, or which is, I fear, but too much the case, has debts to pay which consume a large portion, and in either case, he endeavours to spend as little as possible for the consumption of the plantation.

But on the contrary, how is it with him who allots a due proportion of his land and labour for the raising of not only corn and potatoes, but also of such other things as he finds add to the comfort, not only of himself, but also of his slaves and plantation generally. He plants a certain portion of his crop for market; if it makes a good return he realizes a handsome sum from it, from which he has no occasion to deduct a portion for the purchase of provisions, for he has taken care to plant enough to insure him against needing a foreign supply. But on the other hand, should he lose his cotton crop, or the greater part of it, yet it does not occasion the same distress to him, for he is not obliged to go into debt in order to feed his labourers; he is already provided, and the little he has made goes either to liquidate some former debt, due for the purchase of some part of the property now owned, or to the purchase of more; and this is, perhaps, done without depriving himself or his plantation of a single comfort they have been accustomed to. But I have truly digressed much further than I intended, when I set out to illustrate how necessary it was to apportion properly the quantity of marketable and provision crops.

Having settled this point, the next should be the order they should be planted, and the order they are to be worked in. This is a matter but little thought of by our planters, and they appear to be frequently undetermined which they shall plant first, or what quantity they shall plant of each at the time, but often act on the impulse of the moment without regard to the future working of the crop. It is true, if asked, they will tell you that they intend planting such and such fields, and in such succession. But how often is this varied, and instead of following the plan which they had previously determined on, a totally different one is pursued. This want of systematic arrangement in the planting of the crop often occasions serious inconvenience, and I believe frequently loss. It is so long since I have myself been engaged in working a crop, that I cannot even hint at the best order in which the different parts should be planted and cultivated, but I think the plan and reasoning assigned by Mr. J. Hamilton Couper, of Georgia, and given in one of your "*Agricultural Excursions*," comes nearest to my ideas on the subject, and I cannot but recommend the perusal of that part again to your readers.

The next thing to be considered, is the best mode of apportioning the work among the labourers. Having a certain number of labourers, every planter makes his calculation of how much work he ought to get through with during the season, and if he is a prudent man, he will take care to make the proper deductions for sickness, casualties and deaths; but beyond this, there are not very many who make any alterations in the quantity of work which each labourer is required to do, but assigns to each a like quantity. This I think decidedly wrong, for whilst the strong and active has a light day's work, there are others who, owing to feebleness of constitution, or other causes, are over worked. It is not reasonable, and consequently I cannot think it just, to require the same quantity of work from a delicate female and a strong young man, yet we often see them working in the same fields together, and sometimes side by side, but whilst the one finishes his work by 2 or 3 o'clock and goes home to work in his own field, or enjoy himself in any manner he thinks proper, the other is compelled to work on, and with difficulty finishes her task by sun-down. The one who least re-

quires it has plenty of leisure and time to rest himself, whilst the other who needs this the most has the least. It is true, the work usually assigned is not more than can be accomplished even by the weakest at an early hour of the afternoon; but whenever we have a rainy season, the difficulty of conquering the grass is greatly increased, and it is then that the greatest exertion of each is required, and the great difference in their performances become apparent. On plantations where this state of things exists, I have often witnessed with much pleasure the husband assisting his wife after he has finished his own task, and sometimes I have seen several members of a family in like manner, unite in aiding those who have been less fortunate than themselves in accomplishing their tasks. What I would recommend is, that the whole operative force of a plantation be divided into four divisions, viz:—

1st. Full hands, which should include all the strong and active of both sexes.

2dly. Three quarter hands, which should embrace those of delicate frames and constitutions, and also the young, who are not able to do a full day's work.

3dly. Half hands, embracing those who are declining in years, and the young negroes, who are just entering on their occupation. And,

4thly. Quarter hands, which should include all of the young and the old negroes, who having declined in years are no longer able to perform much work, and are intitled to indulgence. Besides these, above a certain age, all of the children should be collected together every day, placed under the charge of some faithful old negro, and be employed in the light work of the plantation such as minding birds, cutting up weeds, collecting manure and trash, &c. Very little could be expected from these, yet something may be done by them, and they would acquire in early life an industrious habit, and instead of being a nuisance as I have often seen them on plantations, (doing nothing but sauntering about and getting into mischief) would be usefully employed.

By dividing the hands as I propose, the planter would be able to assign to each gang, work suitable to their abilities, and would be able to accomplish fully as much, without overworking any, as he could have done under the old system, because he will be careful to assign to those of No. 1, the work which requires the greatest exertion,

whilst that which requires less will be given to those, who have less strength, and all will be accomplished; whereas, did he give work requiring much labour to a feeble hand, (say of No. 2,) it could not be done, although, perhaps a very easy task for a prime or full hand. The consequence would be, that either the work would be slighted, be but partly done, or from over exertion to accomplish it, sickness may be induced, especially if such occur several days in succession. There is always on all plantations, work requiring different degrees of strength to accomplish, which would enable a planter to assign to each gang, its appropriate labour. Besides which, (and it is what ought not to be overlooked) by dividing them into gangs according to their strength and abilities, the spirit of emulation is kept up, which is always highly desirable, and which makes them work with more cheerfulness, and I do not hesitate to say, makes them execute the work better. But when they work promiscuously, all emulation is destroyed, unless it should be between a few of the *primest hands*, and even among these it will be but short, for they will very soon leave off comparing their work with each other, to compare it with those who are inferior and yet have to do the same with themselves. And what emulation can there be, between those who are so unequally tasked, as that one shall accomplish his work by 2 or 3 o'clock, whilst the other has to remain until near sun-set. But divide them into gangs of equal strength and ability, and a spirit of emulation will be immediately excited, and all will be striving to see who can finish their work the earliest and the best, and this spirit may easily be kept alive by the planter, or overseer.

But Mr. Editor, I have written enough for once, and somewhat with the garrulity of old age, I have run on without much arrangement of my subject, but this you must excuse. I cannot go systematically to work, although I recommend system to be observed on all plantations. The fact is, I write only when the spirit moves me, and then whatever comes up, is placed on paper and these crude thoughts I shall occasionally forward to you, to be disposed of as you may think proper.

Yours with esteem,

A RETIRED PLANTER.

ART. XLVII.—*Method of protecting Rice from Birds;*
by Q.

" July 8, 1834.

Mr. Editor,—The season has again come about when rice-planters will be obliged to make all possible exertions for keeping off the birds from their rice. For this purpose, they turn out all who can be useful in driving the birds; in many cases including those who from age, infirmity, convalescence, or pregnancy, would otherwise have been left at home; in some cases, employing the young and able hands, who might be more advantageously engaged in harvesting; in all cases, the negroes doing great injury to the crop, breaking down and trampling on the rice, by running among it to do their duty. After all that can be done in this way, has been done, to save the crop, is not the loss very considerable, amounting occasionally to one-fourth of the produce, and probably being on an average one-tenth. Whether the proportion be little or much, is it not an object to drive the birds more effectually, and with less risk and injury to the negroes and to the crop?

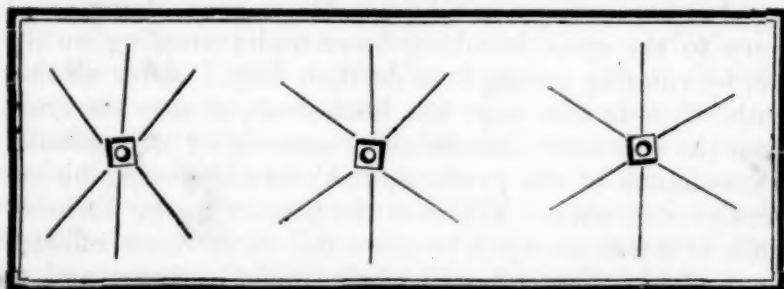
For this purpose, I would invite the attention of planters to a plan suggested in your valuable work sometime last year, and propose that sheds should be constructed on the banks in different parts of the field, under which an intelligent, faithful, but infirm negro, might be able to supervise and protect four or five acres of rice. By extending twine in different directions from this shed to saplings or hoop-poles stuck up at suitable distances, a bell may be set in motion, and continued by the vibrations of the sapling, so as to scare the birds much more effectually than could be done by five or six negroes, and done instantly. If to each of these twines be tied two or three pieces of rags to be kept in motion by the wind, or set in motion by pulling the string; the alarm from the bells, and the fluttering of the rags, like the flying of so many hawks, will most effectually scare the birds.

By the plan now in use, it is impossible to drive off the birds; every planter must have seen the flocks of birds,

when scared from one place, only fly a few yards, and again alight like swarms of locusts to devour his substance.

I annex a rough diagram of the sheds and twines, that this plan may be more clearly understood, and make a stronger impression on the minds of those most interested. Let it be tried this year in at least one point on each plantation—the cost will be nothing—the saving may be considerable, and in future, may prove highly important to the interest of the rice-planter. The preservation of health and life will be promoted by it, if not the increased product of the crop.

Q.



PART II.

SELECTIONS.

ART. LVIII.—*Culture of Sugar-Cane in Louisiana.*

[From the Manual on the Cultivation of the Sugar-Cane, and the Fabrication and Refinement of Sugar. Prepared under the direction of the Hon. Secretary of the Treasury, in compliance with a Resolution of the House of Representatives of January 25th, 1830.]

(Concluded from page 361.)

Process of Sugar-Making in Georgia and East-Florida.—

In describing the process of Georgia and Florida, we shall allude only to those particulars wherein it differs from that of Louisiana.

The buildings of the sugar works are either of wood or of tabby.* In general form, they differ somewhat from the plan adopted in Louisiana. It is more common to find the cane mill in a separate building. Steam mills are less common, and the cane carrier is unknown. The kettles are like those above described, although the masonry above their brims is of very inferior workmanship,—an attempt being made in many instances to remedy the defect by a lining of sheet lead, which covers the saddles and the sides in front and rear of the kettles, and even extends below their rims a distance of two or three inches. The chimneys are built without the open space for the circulation of air, described in those of Louisiana. Wooden chimneys for carrying off the vapour from the kettles are not in use; and the facilities for transferring the syrup from one kettle to another, are inferior in a majority of the houses.

But little uniformity prevails in the method of clarification. The temper, however, is generally added by weight; and differs, from two to eight ounces for the hundred gallons of juice. With some, it is added in the first kettle, as in Louisiana; with others, in the cane liquor vats, in the cold; and again with others, it is added in copper clarifiers, set to a distinct furnace. When the

* An extemporaneous, calcareous shell-breccia, formed by mingling in moulds, oyster shells, and quick-lime.

operation is performed in the cold, the whole charge of temper is not added at once; but a quantity equal to one-quarter or one-third of the whole charge, is reserved to be added, when the liquor has attained the concentration of 15° of Baumé. After having added the lime to the cold liquor, it is suffered to rest for an hour, in order to allow the precipitate to subside; after which, the clear supernatant liquor is drawn off to the grande. Clarification by steam, and concentration by the bascule pan, are, so far as we are informed, unknown to Georgia and East Florida.

The thermometer is more extensively employed than in Louisiana; and the point at which the boiling is completed, falls within a lower range. It rarely rises so high as 236°, and often falls as low as 229°.

On some estate the battery is struck into coolers, as in Louisiana; while in others, it is ladled out into a reservoir, from which it is carried in buckets, before granulation, to the draining room, and put into half hogsheads, barrels, &c. which are tapped in twenty-four or thirty-six hours, and suffered to drain for sixty days. The draining houses are not kept of a uniform temperature by stoves.

Explanation of the Chemical Agencies of some of the foregoing processes—Nothing need be said under this head of the first operation in sugar-making. The theory of defecation, however, is explicable only on chemical principles. The lime, it would seem, operates by converting the vegetable mucilage into gum,* and by forming an insoluble compound with the colouring matter. It likewise enters into union with the gum, rendering it more soluble; in consequence of which, the cane liquor becomes more fluid, and presents less opposition to the subsidence of the precipitated fecula. The temper appears to exert an influence in defecation, by neutralizing, also, the free acids, which hold the gluten in solution, and thus rendering this fermenting principle insoluble.

The heat coagulates the albumen which is not previously rendered uncoagulable by its union with the lime; and in rising to the surface, in flocculi, through the fluid mass, it brings along

* As a reason for the opinion before expressed, that the colouring matter is dissolved in the mucilage, rather than in the gum, which is the more general impression, it may be remarked, that where no temper is employed, as has been practised by some sugar makers, it has been found that nearly all the fecula was got rid of in the course of the operation, which is what might be expected, if that matter owes its solubility to the agent in question; since it has been ascertained, that vegetable mucilage, on being being boiled in a large quantity of water, is changed into a substance resembling gum. If this view of the subject be correct, the chief objection against dispensing with alkali, altogether, would appear to arise from the mucilaginous or viscid character imparted to the liquor by the gum, thereby impeding the precipitation of flocculent matter, and which can be overcome only by having recourse to temper.

with it, in part, the precipitated fecula, and there holds it in the form of a more or less tenacious scum. We have here spoken of *that part of the albumen that is not previously rendered uncoagulable by its union with lime*—for it is probable that the larger portion of this principle is, by its union with lime, deprived of the power of coagulation.

As the evaporation proceeds, and the syrup increases in concentration, the fluid compounds, of lime and gum, and of the same alkali with albumen, and which are lighter than the saccharine solution, rise to the top of the kettles, bringing along with them, in their passage, some of the remaining particles of green fecula, and fragments of the rind and pith of the cane, together with other impurities. Only a part of these are got rid of by the skimmers; the major portion, being scum, passes back over the saddles to the grande, to be brought forward, again and again, in each successive charge, and finally to be skipped off with the granulating syrup.*

The liquor from unripe canes, requires more temper, for the reason that it contains more colouring matter and more gum: the reason for adding more alkali to gummy syrup being, that, without it, its viscosity would interrupt the process of granulation and check the draining in the hogsheads. It is cane liquor of this description to which the sugar-boiler frequently adds a dose of lime-water just previous to striking.

The broad surface of the coolers and the stirring contribute to a speedy and uniform granulation; inasmuch as evaporation is promoted and the syrups of different densities, which contain variable portions of uncrystallizable matter are thus equally blended together. The second stirring, or that after the crystals have begun to form, has the effect of distributing nuclei of crystallization to portions of the fluid, in which they did not previously exist.

The theory of potting depends upon the thorough disintegration of the hard cakes formed in the colours, and in transforming it whilst in this state, and while sufficiently warm to keep the gummy and albuminous substances which are every where contained in it, fluid,—in order that they may flow out through the openings left in the hogsheads, along with the uncrystallized syrup. For, if the proper degree of pulverization be not given to the contents of the coolers, the fluid matter is prevented from finding a sufficient outlet; and if by the excess of cold, the gummy matter stiffens, the draining is completely checked, and the granulated sugar becomes again dissolved; the whole forming a

* In consequence of the deterioration of syrups from this cause, we have known of instances where the syrups become finally incapable of granulation and are sold as molasses.

clammy, pasty mass. Hence the reason also for covering the top of the hogsheds, and of regulating, artificially, the temperature of the draining rooms.

The bottoms of the cisterns are covered by matter consisting of granulated sugar, carried from the hogsheds entangled in the molasses, and also of an additional crystallization of sugar which takes place, as the syrup which drains from the hogsheds, or is derived from the bleeding of the coolers, becomes colder, and as a portion of its water suffers evaporation. The granulation ceases at that point, where the density of the medium creates a force superior to that of the molecular attraction of the particles of the sugar. But as the cistern bottoms are mechanically associated with many impurities, and especially with a large quantity of gum, the addition of lime in the reboiling becomes necessary, in order to promote the fluidity of the syrups.

As a reason why acid cane liquor requires no temper for its defecation, it may be supposed, that the acetous fermentation has taken place at the expense of a portion of the gum; and that the precipitated fecula is not therefore prevented from rising through the liquid. The albumen also remains in the solution, which being coagulated by heat, assists in carrying to the surface the precipitated flocculi.

It is, perhaps, impossible to account, satisfactorily, for the superiority attributed to ley in the defecating process. If, however, it be conceded, that alkalies have a stronger affinity for colouring matter and for albumen, than for sugar—and there is much to favour this opinion—it would then appear to depend upon the different circumstances of the two alkalies arising out of their solubility. The lime, it will be remembered, is added in condition of a cream, while the potash is employed in the state of a transparent solution. The former falls to the bottom, and its solution goes on slowly, the liquor in its vicinity being operated upon not merely so as to cause the precipitation of the green fecula and to give rise to the compounds of gum and albumen with the lime; but owing to saturation of the fluid with the alkali, the sugar itself entering into union with it; whereas, in the other case, the solubility of the potash favours its being brought into immediate contact with every portion of the liquor, and of its exhausting itself, simply in producing the desired effect, without attacking the sugar.

The advantages of the clarification by steam arise out of the more effectual separation of the flocculi of green fecula and albumen. This follows from the time allowed for the formation of the scum and for the settling of the sediment in the clarification vats, and when an intervening cistern is employed between the steam vats and the kettles, in which the liquor is suffered to become completely cold, an additional sediment is deposited.

The utility of the bascule pan depends upon several circumstances. In the first place, the syrup being drawn off at 25° to 28° Baumé, and suffered to cool, deposits a large portion of fecula which is not otherwise wholly got rid of, and in the second place, the greater rapidity, with which the evaporation is performed, and the power of decanting the whole charge at once when the working is completed, are great advantages; whereas on the old pan, it required several minutes for this operation, the consequence being that the last portions ladled out were over cooked, or burnt, and a portion was necessarily left behind, to keep the battery from cracking, which of course is diluted with the charge coming from the syrup, and thus still longer exposed to the deleterious influence of heat and air.

Of the chemical composition of molasses, on account of its variable character, no precise account has been, or perhaps can be, given; that it is an aggregate of numerous principles, however, cannot admit of a doubt. The prominent ingredient in syrup is dissolved sugar, or syrup; next to this, gum may be mentioned; after which, the compounds of both these substances with lime, and finally, the compound of lime and albumen, free acetic acid, acetate and super malates of lime and potash, sulphate of lime, and various insoluble matters collected in the operations of harvesting the cane and manufacturing the sugar.

ART. LIX.—*Increasing and Fermenting Manure in winter.*

[FROM THE NEW-YORK FARMER.]

It is a very common remark, and frequently illustrated, that what the farmer earns in summer is expended in winter. This arises from the unproductiveness of the labour of both the farmer and his horses during the congealing months. Among the subjects of primary attention at this season is the preparation of manure. For the want of this preparation, many farmers have little or no manure for their spring crops, particularly for corn, and for top dressing. Besides being unfit, from its coarseness, and want of fermentation, it is attended, at the most busy part of the year, with much additional labour in carting, and in applying it to the ground.

It is a generally received opinion that manure requires the heat of spring and summer to produce fermentation: but

this is erroneous. Straw, leaves, and various other vegetable as well as animal substances, may be very much fermented and commuted in the winter and early spring months. In August number of the *New-York Farmer*, page 225, we have given our opinion in favour of fermented manures. We shall now hastily give the opinions of others, intending to continue the subject in the succeeding numbers. We shall first give a few extracts from the *Farmer's Register*, detailing experiments in fermenting manure in winter. The attention of readers is particularly requested, not to the facts, but to the methodical manner of pursuing the experiment.—*Ed. N. Y. Far.*

Experiments and Observations on the Fermentation of Manures.—It has been often said that the experiments in agriculture, which result in failure and loss, if correctly reported, would be scarcely less instructive than the smaller number which prove successful and profitable. I propose submitting a report of this character to the readers of the *Farmer's Register*, in which errors, caused by ignorance and inexperience, are at least as conspicuous as correct views: and as much of value was lost as secured, by any operations. Still, I am persuaded, that even from my erroneous management and mistake, I have received profitable lessons, and that my facts and observations may also be useful to other farmers, even if my deductions are not altogether correct.

Circumstances enabled me last winter, for the first time to devote a considerable amount of labour to the collection and preparation of vegetable matters for manures. Having but little confidence in the truth of my opinions, as the best management of manures, and not more in any or all of the innumerable writers on this subject, I determined to test my opinions by experiments, and to record my observations minutely for my future use. This journal of my operations, with but few operations in form only, will constitute the present communication. Entertaining the opinion that the fermentation of coarse manures is necessary, but that great and needless loss is caused usually by that process, it was my aim so to conduct the fermentation as to avoid as much as possible the usual loss of its products.

A new site was chosen for the barn and threshing machine, the most convenient for making manure, as well as for storing the grain crops. Between the barn on one side, and the place intended for the stables and the corn cribs on the other, a space of fifty yards square was marked off for the winter cow-yard. In October, 1832, the middle of this space was dug out to the depth of fifteen inches, and the earth moved in carts, and deposited on the outer twelve feet of the square, so as to form, when completed, a basin, the middle of which was two and a half feet deeper than the raised surrounding border. This border was intended to form a dry resting place for the cattle, and also to

keep in the fluid parts of the manure, and to keep out rain water from the adjacent higher ground, which (it was feared) might otherwise have made the litter too wet for the comfort and health of the cattle. The soil was a sandy loam, about six inches deep, and the subsoil becoming a sandy clay about eight or ten inches from the surface, not quite close enough to keep water from sinking, but would become so by being trampled. The middle of the basin was of this subsoil, while the outer edges and the raised borders were mostly of the lighter soil. The yard was enclosed by a straight fence—and along the north side, and partly on the adjoining east and west sides, a sloping slab shelter was made to protect the cattle in bad weather.

[For the remainder of this article, we refer our readers to page 28, of the present volume, where the whole experiment will be found fully described, and concluded at page 40. We, therefore, insert the following from the *New-York Farmer* of December, 1833; which will give a pretty general view of the subject.]

Although it has been very generally inferred, from the experiment of Sir H. Davy, and other chemists, that fermented manures lose a very great proportion of their fertilizing properties, still, in all the nicer operations of culture, particularly by gardeners, there has ever been a preference given to rotted dung. It has been supposed, and urged as conclusive proof, that modern science decided absolutely in favour of the use of long unfermented manures, and against it, in a rotted state. We shall continue to lay before our readers that information, which, in our apprehension, will lead them to conclude that neither modern science nor enlightened modern practice is, altogether, disapprobatory of fermented manures. We invite special attention to the following, from Professor Rennie's recent work on Gardening.—*Ed. N. Y. Far.*

Humic Acid and Humin.—In most chemical books, the terms *Ulmic Acid* and *Umin* are used, from *Ulmus*, elm: but as its substance occurs in moist, if not all plants, the name is bad. I prefer Sprengel's terms, *Humus*, soil.

This important substance was first discovered by Klaproth in a sort of gum from an elm; but it has since been found by Berzelius in all barks; by M. Braconnot in saw-dust, starch, and sugar: and what is still more interesting for our present purpose, it has been found by Sprengel and M. Polydore Boullay to constitute a leading principle in soils and manures. Humin appears to be formed of carbon and hydrogen, and the humic acid of humin and oxygen. Pure humin is deep blackish brown, without taste or smell, and water dissolves it with great difficulty and in small quantities; consequently it cannot, when pure, be available as food for plants.

Humic acid, however, which, I may remark, is not sour to the taste, readily combines with many of the substances found in soils and manures, and not only renders them, but itself also, easy to be dissolved in water, which in their separate state could not take place. In this way humic acid will combine with lime, potass, and ammonia, in the form of humates, and the smallest portion of these will render it soluble in water and fit to be taken up by the spongelets of the root fibres.

It appears to have been from ignorance of the important action of the humic acid in thus helping to dissolve earthy matters, that the older writers were so puzzled to discover how lime and potass got into plants, and it seems also to be this chiefly which is so vaguely treated of in the older books, under the names of *extractive*, *vegetable extract*, *musilaginous matter*, and the like. Saussure, for instance, filled a large vessel with turf, and moistened it thoroughly with pure water, when by putting 10,000 parts of it by weight under a heavy press, and filtering and evaporating the fluid, he obtained twenty-six parts of what he termed *extract*; from 10,000 parts of well dunged and rich kitchen garden mould he obtained ten parts of *extract*; and from 10,000 parts of good corn field mould, he obtained four parts of *extract*.

M. Polydore Boullay found that the liquid manure, drained from dung-hills, contains a large proportion of humic acid, which accounts for its fertilizing properties so well known in China and on the continent; and he found it also in peat earth, and in varying proportions in all sorts of turf. It appears probable, from Gay-Lussac having found a similar acid, (technically *Azumic acid*,) on decomposing the prussic acid, (technically *Hydrocyanic acid*,) that the humic acid may be found in animal blood, and if so, it will account for its utility as a manure for vines, &c. Dobereiner found the gallic acid convertible into the humic.

Scientific Principles of Manuring.—As the chief food of plants consists of carbonic acid gas, and humic acid, mixed with water, it is clear that every sort of manure, whether it be simple or mixed with other substances in form of compost, must be tried and judged, in the first place, by the proportion of carbonic acid gas and humid acid, which it contains, or may evolve after it has been applied; and in the second, by the quantity of water which it is able to take up and retain. This second test alone must not be trusted to, otherwise bog earth, a very sterile substance in its undecomposed state, might be decided to be the best of all manures; nor will the first test always answer, otherwise chalk, (technically *carbonate of lime*,) would appear to be an excellent manure, and so it might be under peculiar circumstances, and would be always, if it could be brought

to take up and retain enough of water to dissolve a portion of it, which it can only do by means of humic acid.

The Fermenting of Manures.—It is the common opinion, that every sort of dung, when well rotted and reduced to a uniform dark brown mass, similar to fresh peat, so that it can be cut with a spade, is more valuable than when fresh and mixed with straw and other litter. There can be no question of this opinion being correct, though the doctrine at present held in books seems to oppose it, upon principles deduced from the experiments of Sir Humphrey Davy, made before the discovery of the effects of humic acid. The two tests of the quantity of carbonic acid gas contained in rotted and in fresh dung, and the capacities of each for taking up and retaining water, would at once lead to the correct view of the subject, independently of ascertaining the proportion of humic acid.

With respect to water, there can be no question that rotten dung is very much superior, in imbibing and retaining it, to what is fresh, unfermented, or beginning to ferment, as may be easily ascertained in the way already described by those who doubt the fact. With respect to carbonic acid gas, humic acid, and the minor materials of the food of plants, there can be as little doubt of the superiority of rotten dung, which is in fact in a state very nearly approaching to the best leaf mould, or virgin loam, and though a weighed quantity of fresh dung certainly will yield more carbonic acid gas than when this same quantity is allowed to ferment and rot, in consequence of much of it being given off during these processes, yet the weighed quantity of fresh dung will bear no comparison in this respect with the rotted dung. The quantity of humic acid is very considerably greater in rotted dung.

Here then is the state of the question, which is so far one of economy, that there is a certain loss sustained by the dung during fermentation and rotting, in the same way as there is a loss sustained in roasting a piece of beef; but nobody, I think, except an Abyssinian, who likes raw beef cut from a living ox, would try to economize provisions by not roasting his beef, any more than a gardener would in not rotting his dung. The rotted dung accordingly, like roast beef, appears, from what has been now stated, to be altogether of superior quality as food, on a comparison of equal weights of it and fresh dung, particularly with regard to humic acid.

The recent practice of covering up fermenting dung with earth is founded on a smattering of chemistry, without a sufficient knowledge of its principles, for the earth can no more confine the carbonic acid given off during the fermentation of the dung below it, than a gauze balloon would confine gas enough to carry it up into the air; though this covering of earth will undoubtedly check very violent fermentation by partly keeping out the at-

mospheric air and rain water, the oxygen in either or both of which is indispensable to the process, it being this oxygen which forms the carbonic acid gas by uniting with the carbon in the dung.

Fresh dung, if, like that of rabbits, pigeons, poultry, and sheep, it be somewhat difficult to dissolve in water, will prove injurious, in consequence of the portion dissolved being too acrid, from containing a great quantity of ammonia; and hence it must either be well rotted, with the loss of more than half its substance, or so broken down and mixed with sharp sand, or diffused in water as not to concentrate its ammonia or other acrid principles, which might otherwise *burn* the plants, as it is not inappropriately termed. For the same reason, the draining of dung-hills and urine ought always to be diluted with at least three-fourths of water before being applied. In this way they become excellent manures from containing so large a proportion of the important principle of humic acid.

Composts.—It having been found that the most fertile soils are those which contain a mixture of various ingredients, the conclusion was obvious, that soils artificially composed of the same or similar materials, would prove similarly fertile. This gave origin to the various compositions termed composts, whose value must of course be tried, like that of individual manures, by the two leading tests of their proportional quality of carbonic acid gas and humic acid, and their capability of taking up and retaining water.

Compost heaps or pies must be managed on the general principles of chemistry already detailed, particular care being taken to guard against loss. Lime, for example, if mixed in a compost heat with rich old soil, or with rotten dung, will take up and render useless the carbonic acid gas which they contain, and can only be used where there is much woody fibre difficult to be broken down. Bog earth mixed with fermenting dung, forms a good compost; as does also all vegetable refuse, such as weeds, young shoots of trees, and turf from hedge-banks or road-sides.

Having giving the science of manufacturing manures, we sub-join the opinion of a practical farmer. It is contained in answer to numerous questions put by the Board of Agriculture of the Eastern Shore of Maryland, to Governor Stevens. We would remark, however, in reference to the opinion of Professor Rennie, respecting the inutility of coverings of some kinds of soils to prevent the escape of evolved gases, that carbonic acid gas being heavier than the atmosphere, it will settle down into the openings, and thus in time become absorbed by the liquids and rains:

What are your means of making manure, and the means you adopt?

Answer.—I am a strong advocate for compost manure, when it can be made with economy, which should be strictly attended to by every farmer. My usual habit is, as soon as I get my wheat trodden out, and my corn secured in the fall, to litter my farm yard (and if my cultivation is far off, I select some warm spot near the field) with leaves and pine shatters, (preferring the former.) I then draw in a quantity of corn stalks, which I repeat at every convenient period, so as to have the greatest part of them in before Christmas, where I pen my cattle, having a shelter for them; my racks are then filled with straw,—the stalks not only afford good feeding, but, when trampled on and broken up, they present an excellent bed to receive the urine and dung of the cattle. During the winter, I draw in dirt, leaves, hog beds, rotten pine stumps, and every thing which I think will add to the quantity and quality of the manure. My horses are well littered with straw, and sometimes with pine shatters; the stables well cleaned out, and the manure deposited near the door in a long bed, where dirt, marl, &c. &c. are drawn on until well covered about six inches deep, the manure again spread on every morning, as taken from the stable, until the dirt is covered about six inches deep, and so continued through the winter, alternating the dirt and manure, which prevents the fertilizing salts of the manure from flying off, and converts the dirt to good manure.

In the spring I select some favourable spot near where I propose to use my manure, which I denominate my *summer cow-pen*, into which I draw leaves and shatters, then the remnant of my corn stalks, which are not exhausted during the winter, there I pen my cattle every night, during the summer and fall, until the weather forces me into winter quarters, with positive orders never to turn them out in the morning, until they are hurried round the pen five or six times by the cow-boy, by which means much manure is preserved, which would otherwise be scattered out of the pen, as all stock feel disposed to dung immediately after they are disturbed, not forgetting to replenish my pen whenever I deem it requisite with dirt, mud, marl, weeds, &c. and every thing which will be beneficial, which I use the following spring—for, rest assured, the *manure bank* is the farmer's *gold mine*, out of which he digs all his wealth and independence.

In what state ought manure to be hauled out into the field to impart most benefit to land and crop?

Answer.—On this question a variety of opinions exist, but I will, in a concise manner, state mine. Much depends on the kind of soil; if a hard, stiff, white oak clay bottom, I should not hesitate to pronounce the half rotted manure preferable, inasmuch as it will tend to open the pores, and divide the stiff, adhesive particles, and more freely admit the dews and rains,

leaves the land in a better condition, and advances the crop. But should your land be of a different complexion, say light loam or sandy, I would then advise the manure to be applied in a well rotted state near the surface.

ART. LX.—*Early Lambs.*

[FROM THE GENESEE FARMER.]

The more common practice with farmers in the Northern States, is to separate their rams from their ewes on the first of September, previous to which time some ewes, which had not reared lambs, that season, may have taken him. As the time of gestation is about five months, such ewes may be expected to bring forth about the first of February. It is highly important that such lambs should be reared, both with regard to the present profit, and future prospects of the flock. Where lambs are reared for market, such early lambs always command a greater price than later ones, when they have arrived to the same age. As early lambs are rarely produced by any ewes but such as were in high flesh in autumn, there is little danger, where flocks have been well kept, but that they will furnish plenty of milk for their lambs, and the greatest danger of losing them is by their becoming chilled. Before they can get any suck from their dams, for after they are three or four days old they seem as capable of enduring the severity of winter as the old sheep. It is highly important that such ewes should be put in sheltered situations, with plenty of litter and where they may be seen often, so that if a lamb becomes chilled he may be taken to the house and placed near the fire until he is sufficiently warm, to be returned to the ewe. Where the owner is wishing to increase his flock it is important also to rear the early lambs, as they uniformly make the largest and strongest sheep.

It is of the greatest importance to the owners of flocks, that sheep should be well attended, during the month of February. When the ground is covered with snow it is not sufficient that sheep should be fed with hay, they must have some other food, as turnips, potatoes, mangold wurtzel, or some kind of green food, that will prevent their becoming costive, which is most sure to be the case, when they are fed upon hay alone. If a flock of sheep are allowed to become costive and feverish, it is sure to

affect the wool, and give it a yellow appearance, known by the terms, *hide-bound* or *cotted*, which greatly diminishes the value of it; therefore every farmer that intends making his flock profitable, should consider, that this is one of the most important months in the year, requiring more care with sheep than any other.

ART. LXI.—*Fruits worthy of Cultivation.*

[FROM THE NEW-ENGLAND FARMER.]

We are happy to receive the following, which will prove very important to all cultivators of fruit-trees, as well as beneficial to all who are fond of the most wholesome as well as delicious luxury, which earth can produce or culture improve.—*Ed.*

Mr. Fessenden,—Sir, —Inquiries having been made through the medium of your paper, for a list of fruits, adapted to the climate of New-England, the fruit committee of the Massachusetts Horticultural Society, offer to the public, the following list of apples, pears, plums and peaches; all of them good, and many of them excellent. They do not wish to be understood as saying that the list contains *all* the fruits worth cultivating, but they prefer to recommend a few sorts known by experience to be good, to a large number of doubtful names, whose merits have not been sufficiently tested. Additions will be made to the list after the close of the ensuing fruit season, which will be published in the *New-England Farmer*. All of the fruits enumerated, have been exhibited at the meetings of the Horticultural Society; bearing trees of most of them are now growing in the gardens of the members of the committee, and trees can be had at any of the nursery establishments in this vicinity.

It may be proper to remark also, that the time of maturity of the different varieties, is designated in nearly all the nursery catalogues, a point of much importance to be attended to, with a view to a regular succession of fruit, as well as the fact, that there are some kinds embraced in this list, which, although it would be very desirable for every fruit grower to possess a single tree, could, by no means, be recommended for extensive cultivation, whilst others might be cultivated to any extent desired. These

points, as well as the relative degrés of excellence between good, better, and best, applicable to the best varieties, must be left to the taste of the cultivator, which, in the advanced state of knowledge upon the subject, it is presumed almost every one has within his reach the means of determining correctly.

List of Apples.—Early Harvest, Red Margaret, Bough, Summer Rose, Summer Queen, Summer Pearmain, Drap d'or, Fall Pippin, Doctor or Devitt, Hawthorndean, Pennock's Red Winter, Baldwin, Lady. Pomme d'api, Yellow Bellflower, Ribstone Pippin, Rhode Island Greening, Roxbury Russett, Red Astracan, Kilham Hill, William's Favourite, Murphy, Hubbardston Nonsuch, Ortley, Porter's Favourite, Eppes' Sweet, Benoni, American Red Juniataing, Stump of Boxford, Lyscom, Jonathan, Wine, Yellow Ingestrie, Red Ingestrie.

Pears.—Little Musk, Amire Johanet, Madeline, Epargne—(Jargonelle,) Skinless, Julieanne, Long Green, Rouselette de Rheims, Prince's Sugar, Lowry's Bergamot, Moorfowls Egg, Autumn Bergamot (Eng.) Washington, Buffum, Seclé, Harvard, Red Bergamot, (French,) Chaumontelle, Buerre Diel, Buerre Knox, Bleeker's Meadow, Bartlett, Capiaumont, Cushing, Dix, Angouleme, Fulton, Heathcote, Green Sylvanche, Johannot, Napoleon, Passe Colmar, Raymond, Saint Ghislein, Urbaniste, Wilkinson, Colmar Souverain, Burgomaster, Summer Thorn, Andrews, Dearborn Seedling, Surpasse Vergalieu, Naumkeag, Golden Beurre of Bilboa, Wilbur, Cumberland, Knight's Seedling, Capsheaf, Winter Orange, Le Echasserie.

Plums.—Green Gage, Washington, Prince's Imperial Gage, Orleans, Smith's Orleans, Bingham, Elfrey, Coe's Golden Drop, Bleeker's Gage, Italian Damask, Peach, Semiana (of Boston,) Royal de Touis, Pond's Seedling.

Cherries.—Mayduke, Black Tartarian, Blackheart, White Biggareau, Davenport, Graffian, Late Duke, Downer's Late Red, Black Eagle, Belle de Choisy, White Tartarian.

Peaches, Freestone.—Early Ann, Early Royal George, Large Early Red Rareripec, Cooledge's Favourite, Morris' White, Old Mixon, Gross Mignonne, Red Magdalen, Yellow Rareripec, Yellow Alberge, Malta, Belle de Paris, Bell de Vitry, Nivette, President, George 4, White Blossom, (Snow,) Van Zant's Superb, Washington, Yellow Red Rareripec, Titon de Venus, Heath (Kenrick's,) Wells' Seedling, Hoffman's Favourite, Barrington, Clingstone, Kenedy's Lemon, Old Newington, Williamson, Spanish, Hyslop's, Heath, Congress.

ART. LXII.—*Grafting and Inoculating*; by ABEDNEGO ROBINSON.

[FROM THE NORTHERN FARMER.]

Messrs. Editors.—I have the utmost pleasure in acknowledging the great favour you conferred on me in sending the grass seeds, and consider them to be worth \$20; especially under the circumstances and manner of receiving them. It was my ardent wish to obtain, if possible, one seed of the high famed Gama grass, and it has been your pleasure to bestow upon me four seeds; it being the one-half of your whole stock, the residue being disposed of in the same generous manner. It is true, I put my own price upon my own property, but to show my correctness, I would not take the estimated value.

I have thought some suggestions on grafting and inoculating, might be of benefit; and as the season for the operation is at hand, I will no longer delay them. It is not my intention in this experienced age, to attempt to instruct the public, as in a new art, especially, the experienced; but rather to exhibit some of my modes in this branch of husbandry, as improvements.

Persons intending to graft or inoculate to good advantage this present season, should immediately procure their scions, containing their buds and grafts. It is well to have for their better preservation a portion of the larger limbs connected with them. If taken off immediately, they must be thrown, when bundled up and labelled, under the north side of your thick yard, or garden fence, where they will be secure, if exposed to the influence of the atmosphere; having an eye in case of too warm and dry weather, they are not too much exposed. If so, just enter their butt ends under the surface of the earth. This method is better than covering them up *bodily*, or keeping them in a cellar.

Experience has taught me that there is a great advantage in procuring cuttings in this way, over the practice of neglecting till too late. I shall now attempt to shew the best method to manage a nursery, as to securing good fruit, in the most economical and speedy manner. To do this, grafting and inoculating is my text. The nursery is supposed to have been judiciously managed, and of one years growth, from the seed. Of course the plants are from one to two feet high, and as large as a Dutch quill; some much larger. All of this size never will be more fit to bud. There should be no delay. These little young trees have their peculiarly smooth and pliable bark; they are very thrifty, and consequently, may be budded somewhat later, than others of a different character. A nursery in this stage may be most advantageously budded. If the operation be skilful, they will take; and if otherwise, they receive no perceptible injury. The advantages of early budding are numerous and great.—

First, the job contemplated is over; you cannot have any uneasiness about it, from any delays. Your trees are in a much better state for coming to perfection; they will thrive much better notwithstanding they are cut off from two to four inches from the ground the season; they will far outgrow the others in size and height, they also grow more erect and free from craggy twigs, a great saving in pruning. The improvement in their appearance is admirable. Picture to yourself trees from the nurseries such as I have received, and at full prices, with old stocks, half closed over, and budded two to three feet from the ground. The contrast is great.

The disadvantages from suffering nurseries to remain till a number of years old, before budded, is obvious. The wound necessary for the bud, in thick, and old bark, and especially, if the bud does take, is of some injury. The cutting off the large old stock, leaving the bud alone while the stock is closed over—meantime the quantity of roots without a top in proportion, are great checks, and of much injury to the growth of the plant: and must ultimately affect the growth and health of the tree.

I make these remarks from the authority of my own experience in inoculating a nursery in its different stages as above described.

I shall now attempt to describe my process in budding. I was instructed to strike a horizontal cut through the bark with a sharp knife, at a suitable place, on the north side of the stock; striking from this a perpendicular cut about an inch long, opening the bark with a knife or some instrument for the purpose; then taking a bud from a scion, having care to take off a small portion of wood with the bud—then carefully taking away the wood, leaving the stem or eye of the bud whole and smooth—then thrusting in the bud with a due proportion of bark, three-fourths of an inch long, and half as wide. The bark of the butt to be thrust in free from the bark of the stock, above—then closing over the bark of the bud with that of the stock, binding it carefully, with elm or bass rind or with coarse woollen yarn. This process has not yet proved perfect; it has with me often failed. I have sought for a more perfect and sure process. Accordingly, I have varied, as my judgment has led me, for a better method. I have found that instead of striking a horizontal, it is best to cut quite a sloping stroke, splitting down from this slope, perpendicularly so low as to admit the bud, taking off in an oval shape, in the same careful manner as above described; having as much care to preserve a little wood at the eye of the bud as I had in taking it away in the former process. The bud then is to be thrust under the raised bark, down so low as to admit the bark of the stock to come in its former place, above the bud, for half an inch, where it immediately receives its usual nourishment; being bound up with coarse woollen yarn, which I prefer

to any thing else. In winding on the yarn, I am careful to draw it gently over the wound, omitting to cover the bud till the last, over which I then draw the yarn very softly. In this process, every part works so natural, and so smooth, if unbound the next day it would be difficult to distinguish the bud from a natural one; and indeed, the bud as well as the bark of the stock seems not in the least effected. In this mode of inoculating, there is no such thing as not taking. On the other hand, the bark being cut square across, and the bud not being sufficiently thrust down, the bark of the stock coming to bear on the outter bark of the bud, at the top of the slit, there is nothing to support it; but it dries and shrinks from its primitive place, admits air, and if the wood is taken out of the bud, it all fails together; especially if the eye of the bud is a little rubbed: at any rate, live or die, a dangerous wound is inflicted.

The mode that I would recommend, is a safe and fast way of budding; it all works natural; a lad having his hand in, will put in from two to four hundred per day. I now proceed to give an account of inoculating in the spring of the year. This was an experiment, with me, altogether. In the season of grafting, I chose a few trees that were of common size for grafting; some had two good equal branches, one of which I grafted, the other I inoculated at the same time. I carefully cut out the bark of the branch where I chose to place a bud, cutting downward, turning my knife in and out in such manner as to take off the bark in the form usually given in taking off the bud; taking at the same time so much of the wood, as to compare with the bud from the scion; and, if the first cut failed, I carefully mended my hand, until it well suited. Thus the bark being all well done, the bud was laid in, inside comparing with inside; of course a space was left on the edge of the bark of the stock not covered from its extra thickness on the old stock. The buds thus being left somewhat sunk into the stock, were then secured in the usual way of budding.

ABEDNEGO ROBINSON.

Portsmouth, March 10, 1834.

ART. LXIII.—*Draining and Cultivating Low-grounds*; by
P. P. HARPER.

[FROM THE FARMERS' REGISTER.]

The piece of low-land, which furnishes the subject of the following observations, is the bottom of what formerly was an old *Beaver pond*, on the Birchen creek, and containing from twenty-five to thirty acres.

The land is very fertile, with a soil from two to three feet deep, of a chocolate colour, and oily appearance. No timber is on it. Several species of grass, interspersed with shrubs, are its natural growth, affording in the winter season, plenty of wild duck and muskrats for the sportsmen; in the spring, early grass, to bring trouble and loss to the herdsman; in summer, swarms of mosquitoes to disturb our children; and in the autumnal season, it produces the *miasmata* of bilious fevers.

The main ditch is on the south side of the flat, ten feet wide, and three feet deep, (which is almost deep enough for any ditch having sufficient fall,) with its bank thrown towards the land drained, leaving sufficient space for the water to pass in our largest freshets, by which the bank is protected, and the reclaimed land rendered secure. The streams and springs which flow into the bottom from the hills on the north side, are intercepted and carried off, by two smaller ones; one of which, crosses at the upper, and the other along the lower edge of the land. The latter conveys a considerable land stream, is four feet wide, and three deep. Besides these, there are two small ditches, running north and south, (dividing the land into three parts, not far from equal in width,) and these are intersected at right angles, by another passing east and west through the middle of the land, and opening into the upper side ditch. These interior ditches are two feet wide, and two deep; and all serve to draw the surface water from the land, and from the side ditches, and convey it into another ditch, running along the north side of the lower part of the bank, and thence into the main ditch at the lowest extremity. The interior ditches all open into each other; but not into the main, or the side ditches, except at the lowest point, where the water is all discharged.

No bank to these inside draining ditches is necessary, as we plant and cultivate to their very *margin*, to prevent the growth of weeds, &c. which will most certainly fill up the little ditches, if suffered to grow. This piece of ground, I intend to plant in corn this year. The manner of preparing it, the width of the corn rows, the distance of the corn hills from each other, and the nett proceeds of the crop, shall be subject of a separate and distinct *communication*, if no unforeseen occurrence happen. Experience has taught me, that every farmer and planter, should as

soon as possible, make himself well acquainted with the nature and quality of his land, that he may know to what *kind of produce* it is best adapted. Ten years' observation has taught me, that land immediately on small streams, such as branches and creeks, which require ditching to render them arable, will be much more productive and profitable in corn and oats, than in tobacco and wheat. I have made the experiment, I think fairly, and am therefore justifiable in making the assertion. It is true, that the soil on those streams is very rich, yet the different *strata* are very porous, and composed of much sand, often called, and very correctly too, the "washing of the hill sides."

Attending the tobacco crop, there are too many injuries for me ever to think of cultivating it again on low grounds. It is more subject to injury than high land. In wet weather, it is more apt to *spot*. In very dry weather, the scorching sun will *burn* the leaves, unless it is cut green; and it not unfrequently happens, that a freshet (like a hurricane) comes and sweeps it all away; if not, it leaves a *muddy glue* on the leaves of the tobacco, which will ever defy the skill and industry of the factories to make clean. Added to this, I may say, provided the year is suitable to its growing, the tobacco generally becomes too *large and coarse*, to bring high prices.

My objections to the wheat crop on this kind of land, may be very readily made. The land in the first place, is generally too *light*. The exuberant weeds and grass which come forth after "laying by" the corn, renders it almost impossible without double labour, to get the corn off, and fallow in beds, before it will be too late in the year to seed wheat. Unless it is seeded early, and put in pretty deep, it is almost certain to be seriously injured, if the winter is either very wet, or very cold. I have also discovered, that the wheat is much more subject to the disease called the *rust*, than on high land.

To corn and oats, this kind of land seems particularly well adapted. I seeded eighteen bushels of oats, in 1832, on a piece of low-ground, which was the preceding year, (1831,) in fifty thousand tobacco hills; or more learnedly speaking, of from ten to twelve acres. It made me ten stacks about the same size each. Three of the stacks, I cleaned out for seed. They measured about one hundred and twenty bushels; making from the eighteenth, about four hundred bushels. Of the oat crop, I am particularly fond, more especially when there is a prospect of corn selling high, the ensuing summer. From *necessity*, I have very satisfactorily learned, that it is an excellent substitute for both corn and fodder, in feeding to horses, even working horses. Since I have quit making tobacco on low-land, I have been no corn *buyer*. Since I have fallen out so much with the tobacco and wheat crop on this kind of ground, it may be asked, have I abandoned *in toto* the making them? I answer no. I am mak-

ing more, and of better quality. All of the manure, I can raise from my stables, corn stalks, &c. is carried to my two lots, which are enlarged, or *diminished*, according to the quantity of manure I can raise. They are made rich, and are alternately put in tobacco and wheat. In the month of August, and the early part of September, I fallow high ground to add to my tobacco lot, for wheat; by which I can always have enough wheat land for my hands.

Too much care and attention, for the farmer's interest, cannot be paid to such land as has undergone the system of draining. All those who have paid much attention to ditching, and have had much of it done, very well know the great expense necessarily incurred; and unless there is a sufficient fall, it is perfectly useless to attempt it, to any great extent. The little draining ditches are also indispensably necessary; otherwise the land will always be too much "sobbed" (or saturated with water) particularly in the winter season, and early in the spring, when the plough should be preparing it for the expected crop. Land ploughed in such a state never produces enough to compensate for half the trouble and expense of cultivation. The clods thus turned up by the plough in March and April, soon become of a consistence, (comparatively speaking) as hard as brick bats, which roll to and fro during the whole ploughing process, making the horses stumble and the ploughmen limp. But to the point. Our ditches should be watched with a *parent's care*. The banks should be kept clean of weeds, briars, &c. This can be very easily done, by planting pumpkin seed on their sides. Not as much work is required to make this valuable vegetable, as there is time and labour necessary in gathering and hauling them home. This kind of ground produces them in great abundance. The benefit that milch cows and hogs receive from them, need no description from me. I understand horses can be made very fond of them. I have no doubt of it, although I have never tried them for horses.

Every obstruction that is thrown in our ditches, the larger ones in particular, should be removed without delay; otherwise *rafts* will form therein, obstructing the free passage of water; thereby filling up the ditches, and causing an overflowing and breaking of their banks, every freshet. *Overseers and negroes would as soon make a raft, as to take away one*; therefore, it is the bounden duty of the *master*, to visit his ditches soon after much rain.

I may have said more about low-grounds and ditches, than many may think necessary; but the distant reader is informed, and well assured, that this section of Virginia *requires*, that all of her creeks, branches, marshes and quagmires, should be ditched and drained, and the land thereon, and therein, made arable; if not, the deep red gullies, and the barren fields, which

our forefathers left us as a legacy, will most assuredly, either make us real *paupers* or *deserters* of our native State. For the red gullies, we have a *remedy*. For the worn out fields, we have a *specific*. Dr. Farmer's Register, will prove a good physician. We should *theorize* with him of nights, and *practice* on our farms in the day. *Industry, untiring perseverance and good judgment, are necessary auxiliaries.* We should rise in the morning on industry, travel through the day with steadiness, prudence and perseverance, and sleep at night on sobriety and a goodly portion of judgment.

P. W. HARPER.

Grnsfield, Nottoway County, Feb. 20th, 1834.

ART. LXIV.—*Breaking Steers and Colts*; by JAMES WALKER.

[FROM THE NEW-ENGLAND FARMER.]

Mr. Fessenden,—Sir,—I have seen several communications in your useful journal on the breaking of steers and colts, showing different ways by which they could be trained, with ease both to the manager and animals. Almost every person likes his own management the best; and as my circumstances have been so limited, I have endeavoured to adopt the cheapest and easiest mode of accustoming my young steers to the yoke, and my colts to the harness; and every humane person will pursue that course which will produce least bruised places and injured eyes, which are often to be seen on young creatures undergoing their training, and also of saving the trouble of making goad sticks and whip handles that are often needlessly broken about them. Now, Sir, I will lay before you my mode of treatment to these young animals, and if you think it worthy a place in your useful journal, you are at liberty to publish it; if not, you will not wound my feelings at all. I call my young cattle calves till they are one year old. I have a little yoke made with a staple and ring in it. I tell my little boys to yoke up their calves: a little boy can do it, and it is quite a pastime to them; they being so young are not so strong but that he can manage them with ease: any small stick or twig answers to drive them with, and there is no danger of the boy or steers being hurt. When he can drive them where he wishes them to go, which will soon be the case, he will hitch them to a small stick of wood, or if it is winter put them to a hand sled, and drive round with that; they will soon become

docile. There is no trouble with them afterwards, especially if they yoked a few times the second winter; it makes them fond of their mates. Oxen that are trained when young are much more pliable and obedient, which adds much to their value; steers that run till they are three or four years old, are dangerous animals to encounter with; they are always running away with the cart or sled whenever there is a chance for them, and often serious injury is the result. I would not recommend working steers hard while young, as it would prevent their growth—there is a difference between working of them and barely training them.

Colts I begin with very soon after they are foaled; the mare should be bridled and led to the door and given a little salt. When the colt is one or two days old take him by the neck, handle him gently, he is then so young that he is not afraid, if his dam is near by him; continue this practice and he will very soon become fond of his owner, and will come on purpose to be handled after two or three weeks. It does not hurt the mare or the colt to use her moderately. If you want to go to meeting on the Sabbath, harness the mare into the chaise or wagon, and tie the colt to the arm of the carriage; he may be a little obstinate at first, but in going a few rods he will be peaceable and go very orderly; if there are many other horses about, your colt is always with you: if you want to stop at a place any time, let your colt loose, he can be taken again without difficulty, and before you start off tie your colt again; in this way there is no trouble of the colt following other horses away. When they become old enough for service, you do not have to run over all the pasture for the horse; they can be taken with ease. Colts trained in this way are completely halter broken. When you begin to harness them they are not frightened by the noise of the carriage behind them, and are sooner made quiet in the harness. It has been a common saying, that if colts are handled when very young it depresses their courage, which I am convinced is not the fact. I have raised as many horses as most farmers of my age in this vicinity, and some of them the most spirited I ever saw. The above rules I have practised for quite a number of years, and can recommend them to others with confidence. It convinces me of the truth and efficacy of a rule I have found in an old book I have much worn by usage—although yet whole, it has been in our family almost a hundred years—which says “train up a child in the way he shall go, and when he is old will not depart from it.” Train up beasts while young—and I know when they are old they will be serviceable to their owners.

Yours, &c.

JAMES WALKER.

ART. LXV.—*Tulip Mania*; by A SUBSCRIBER.

[FROM THE NEW-ENGLAND FARMER.]

Mr. Editor,—I have often seen it stated that there was a time when the tulip was sold for a great price in Holland; that the variety called the Viceroy, would sell for one thousand dollars, &c. but never saw so full an account of the remarkable tulip fever that raged in that country, as is contained in the following which I have taken the liberty to copy from an old magazine; thinking, should you give it a place in your valuable paper, it would be amusing to many of your readers.

Yours, &c.

A SUBSCRIBER.

In 1634, a violent passion for tulips appeared in Holland, and spread over the United Netherlands, where it acquired the dignified title of the tulip trade. It engaged the attention of all ranks for three full years. The farmer lost sight of his plough—the mechanic of his art—and the merchant of his trade, and strange! the lawyer forgot how to plead: in short the infection pervaded every order and condition of life. All were employed in the tulip trade. or in other words, the new business of raising and vending handsome tulips! Such was the frenzy of the time, that

The Viceroy would sell for £250 sterling,	-	\$1,110
Admiral Pierkeens would often command £440	1,956	
Admiral Van Eyk, £160	- - - -	710
Grebbe was cheap at £148,	- - - -	657
Schilder, £160,	- - - -	710
And Semper Augustus might now and then be had		
as a bargain at £550,	- - - -	2,543

Such sums for such things would appear incredible to this age, if the fact was not too well established to admit of a doubt.

In 1637, a collection of tulips belonging to Wouter Brockholmenster, was sold by executors, for a sum equal to £9,000 or \$40,000.

A fine Spanish cabinet, valued at £1,000 and £300 in cash, equal to \$5,777, was given for a Semper Augustus.

Three other Semper Augustuses brought a thousand pounds each: and the gentleman who sold them refused for his parterre £1,500 a year for seven years; every thing to be left as found in the parterre, only reserving to the lessee, during that term, the increase of these *precious* flowers—which was about \$6,666.

Another person cleared in the course of four months £6,000 or the enormous sum of \$26,670. All these sums are in sterling or good money. At length a check was put to this frenzy, by an order of State, invalidating all contracts made in the tulip trade;

so that a root, which before would command £500 would now bring five guineas.

It is said of a single city in Holland, that the trade in it in the course of the three years, was a million of sterling or about \$4,444,443, all in tulips.

The childish folly of the grave and frugal mynheers, during this remarkable period, cannot be better illustrated than by a story which was often told and always believed to be true at the time.

"A Burgomaster having procured a place of great profit for his friend, a native of Holland, declined some generous offer of recompense from the latter; he only requested to see his flower garden which was readily granted. Two years afterwards the same gentleman paid a visit to his benefactor, and walking in the burgomaster's garden, he recognized there a scarce tulip of great value which the disinterested magistrate had before clandestinely taken from the garden of the other. The promoted friend now became frantic with rage—threw up his place, which was worth a thousand a year—returned home—tore up his flower garden—and was never heard of more!"—*Ann. Reg.* 1765.

ART. LXVI.—*Culture of Melons*; by T. S. P.

[FROM THE GENESEE FARMER.]

In the *Genesee Farmer* of the 18th ult. there is a communication from W. W. B., stating his want of success in the cultivation of melons. Perhaps I may be able to suggest a plan by which he will not be liable to such a total failure in future, though I should suppose that in your latitude there was not much certainty in bringing this delicious fruit to perfection. I would recommend him to select the lightest spot of ground in his garden and at suitable distances, say eight feet apart, dig holes about thirty inches square and eighteen inches deep. In these holes put some well rotted manure, which must be well mixed with the soil, until they are nearly full. The soil should be entirely clean of grass or grass roots, and completely pulverized. A sufficient quantity of the same kind of earth should then be thrown on to raise a hill to a moderate height above the general surface of the ground. If these directions are followed, and the

sub-soil be not of such tenacious quality as to retain much moisture, I think a fair crop may be reasonably calculated upon. An additional advantage would be derived from digging the holes in autumn, and letting the earth thrown out, remain until spring to be ameliorated by the frost. This is the mode pursued by some of the gardeners who supply the Richmond market with melons, and I have found it to succeed better than any other I have tried. I will, however, mention an experiment I made last year, the result of which was favourable beyond my expectations. I raised a few plants both of the watermelon and the canteloupe in a box, which came up very early among other plants. I transplanted them into a rich, well prepared spot of ground, that had been spaded very deep, being careful to take them up with as much dirt round the roots, and with as little injury to the fibres as possible. They grew well, were not infested by bugs, being too large to be much annoyed by them; and yielded a remarkably fine crop, both as to number, size and quality. If this operation is performed well, and the young plants kept moderately watered if the weather is dry, I incline to the opinion that this will be found to be a very eligible way of raising the melon. By this means we may also have the plants in readiness to set out so as to be greatly in advance of those planted in the open ground; for the earlier they get a start the more certain will be the crop. The seeds may be planted at once, and the transplanting done as soon as the danger from late frosts is over.

T. S. P.

Beaverdam, (Va.) 2mo. 3, 1834.

ART. LXVII.—*On Caterpillars*; by GEORGE WEBSTER, of Albany, N. Y.

[FROM THE BALTIMORE FARMER AND GARDNER.]

From my experience, I am fully satisfied our fruit trees may be preserved from that dreadful insect, the caterpillar, in a very sure and easy way. In the year 1804, the large elm at our corner was nearly stript of its leaves by a caterpillar. Various modes to destroy them were made use of, such as covering the trees with tar, fish oil, and downing their nests, but without any good effect. Some day in the month of July, I was standing at our door, when a gentleman from Niskayuna was passing by. He accosted me in words like these: "George, 'tis a pity to

lose so fine a tree." He answered—"We made use of various articles to destroy them, but without success." "Send," says he, "and get a little sulphur and bore into the tree about six inches, and fill it with sulphur, and my word for it, not a caterpillar shall be seen after forty-eight hours." "Will you stay and see it done." "I will," says he. The hole was bored, the sulphur put in, and a piece of wood the size of a cork drove in strongly, to prevent the sap or sulphur oozing out. In a less time than he mentioned, there was not the vestige of a caterpillar on the tree. Soon after, a large caterpillar appeared on our poplars, in front of my house: every tree was served in the same way as the elm had been, and the result the same; while my neighbours cut down those fine trees, because they were very much alarmed that the insect was that very venomous reptile called "the asp." A few days afterwards I discovered that a very beautiful plum-tree in my yard was attacked by the caterpillar; the same course was pursued, and the result the same. I have followed this practice every year since 1805, when I discovered these insects on my trees, and never has there been a caterpillar on my trees after forty-eight hours. It has been tried in New-York and Pennsylvania, where I have been present, and in the western parts of this State. In no case has it, to my knowledge or belief, failed. Two men are sufficient to go through an orchard or forest of 200 trees in a day.

P. S. I have a strong presentment in my mind, that if applied to our peach, plum or cherry trees, it would prevent the black rust.

[We tried this experiment on cherry trees in Cesar-Creek township in this county, in the month of June last; and found that in less than forty-eight hours there was not a worm on the trees; nor did they return.]—*Ed. Indiana Whig.*

ART. LXVIII.—*Ornamental Currant Bushes.*

[FROM THE NEW-YORK FARMER.]

It would be well for florists in this vicinity to supply themselves, as undoubtedly they will, with the new variety of currants mentioned below:

Among the great number of flowering shrubs introduced during the last three or four years into Great-Britain, none, perhaps, exceed in beauty the different varieties of the currant family. To those who are accustomed only to the common currants and gooseberries grown in our gardens, the idea of our bloss-

som of the currant ever being beautiful may seem preposterous, but those who have seen the ripe sanguineum covered with flowers, must allow very few hardy shrubs can surpass it. This shrub, which, in its leaves, &c. very much resembles the common black currant, has blossoms of a most beautiful deep rich scarlet. They resemble in shape those of the common currant, but both the spikes and the tubular flowers with which they are covered are much larger, and from their brilliant colour, they have a most splendid appearance. The fruit is indifferent; it is large and quite black, resembling, both in taste and appearance, a large bilberry rather than a currant. The shrubs is quite hardy, and grows readily from cuttings. Though it has only been grown a few years in this country, one in the Earl of Rosslyn's garden, at Dysart, is already eighteen feet in circumference, and six feet high, and bore last spring eight hundred and thirty-six clusters of flowers. The *ribes sanguineum* so closely resembles the black currant, that a nurseryman who obtained some seeds, some years ago, without knowing what they were, thought the plants, when they came up, were only common currants, and threw the greater part of them away. The shrubs was brought from North America, and may now be had from any nurseryman. The *ribes aureum* is a yellow blossomed variety of currant, which was brought into England in the year 1815. There are two kinds of this variety, one bearing white and the other red fruit. Several other currants have handsome blossoms, but these are the most striking varieties. The *ribes speciosum*, which was the first raised in England in 1829, is an extremely showy plant, having the entire habits of the gooseberry, but with beautiful flowers resembling those of the *fuelesia*. A specimen of this magnificent shrub, in the garden of A. B. Lambert, is now about five feet high, and it blossomed for the first time in May last, continuing in flower for more than six weeks. Its profusion of large crimson glittering blossoms, contrasted with its bright green glossy leaves, rendered it one of the most beautiful objects imaginable. It may be a useful hint to give to amateur gardeners, to observe, that if all kinds of flowering plants are cut off the moment the petals drop, without suffering them to form seed, the plants will be strengthened, and will continue much longer in flower.

ART. LXIX.—*Remarkable Plants.*

[FROM MURRAY'S PHYSIOLOGY OF PLANTS.]

Large Leaves.—In the foliage of plants, there is vast diversity in superficial extent, as well as thickness. There are leaves of microscopic minuteness; and others of immense size. Some species of coltsfoot are of considerable magnitude; and leaves of the rheum palmatum, have been found to measure five feet in their longest extent, by three feet in the greatest breadth. These though remarkable for this climate, sink into insignificance in comparison with tropical foliage; the leaves of the *dancea elliptica* measure, in many instances, not less than six feet in length, and nearly eighteen inches in diameter in their widest part. The leaves of the *strelitza regina* grow to the height of three or four feet by eighteen inches, and sometimes leaves of this plant will be found still larger. The leaf the *musa paradisiaca*, or plantain, has been found to measure more than ten feet in length, by two feet at the base. Some leaves of palms far exceed even these dimensions. A leaf of the *corypha umbraculifera*, or great fan palm, or talipot tree, sometimes measures five and thirty feet in circumference, a sufficient covert for thirty or forty men. The *rafia* palm of Madagascar is said to measure sixty feet. A frond of the *ciboa* palm serves the natives of Africa as an umbrella, and thus protected Mungo Park from the tropical rains. In the South Sea Islands, the leaf of the talipot palm serves as a parasol, as it does the purpose of an umbrella in the East-Indies. At Manilla, one of the Philippine Islands, a Jesuit missionary had a dwelling constructed for him under two palm leaves, where he said mass, and slept secure; it was a complete covert from the storm, and no rain could penetrate. In consistency also, the fronds or leaves are very various; airy like gossamer, or the texture of the most delicate film, up to the coriaceous mass of the Nopal, or the thick succulent leaves of some *mesembryanthemums*, and the rigid ones of the agave. The leaves of the *paliscorea rigida*, large, tough, and unyielding, rustle like parchment in the wind; and the cactus *spinosissimus*, and some *yaccas* and agaves, might form a stockade or circumvallation, which would defy an enemy with all the armory of war. Indeed, we once remember to have seen, near the Orbitello, in Italy, a field, of which the agave *americana* was the entire fence, and a most impenetrable barrier it seemed to be.

Leaves are sometimes beautifully polished, and shine like ivory. The *begonia nitida* has leaves which possess a beautiful lustre: the magnolia, the holly, and the laurel have leaves that seem to be varnished. Each leaf of the double cocoa nut is twenty feet long and ten feet wide. Sometimes the leaf is silky, or satiny, resembling the pericarp of honesty. The silver tree, *protea argentea*, presents a beautiful example of a shining satiny leaf:

some leaves are so clothed with down as to resemble white velvet: the *verbascum thapsus*, or great mullein, is a familiar instance of a thick woolly covering for the surface of the leaf. Sometimes this satiny or woolly integument may be stript off entire, a process which is managed with considerable dexterity by the natives of the south of Africa; the stalks and leaves thus treated, supply stockings, gloves and caps. According to Humboldt, caps are formed of the spathes of certain palms, which possess a coarse net-like tissue. The inner bark of *cerra duida*, or shirt trees, supplies the Indians with garments resembling sackcloth.

The Largest Flowers.—Among the most extraordinary discoveries of modern times, fertile as our era has already been in the fruits of research is that of the *rafflesia arnoldi*; discovered in the year 1818 by Dr. Arnold: its generic name is a very just compliment to the late Sir Stamford Raffles, and the specific name to that of its discoverer. The circumference of the full expanded flower is *nine feet*, being a yard in diameter. The nectarium was computed to hold twelve pints; and the entire weight to be fifteen pounds. The petals or segments, which are five in number, are about twelve inches long, and vary from one-fourth to three-fourths of an inch thick. The colour of these petals is a brick red, covered with yellowish white protuberances. I have seen a white wax model of this magnificent titan of the vegetable kingdom, in the rooms of the London Horticultural Society; and there are buds in the Linnean Society's Museum; the flower fully blown was discovered in a jungle under some bushes, close to the ground, with a swarm of flies hovering over the nectarium, and apparently deposited their ova in its substance; the late Dr. Arnold thus announces its discovery in a letter to a friend: "At Pulo Lebban, on the Manna river, I rejoice to tell you I met with what I consider the greatest prodigy of the vegetable world. I had ventured some way before the party, when one of the Malay servants came running to me, with wonder in his eyes, and said '*Come with me, Sir, come! a flower very large, beautiful, wonderful!*' I went with the man about a hundred yards into the jungle, and he pointed to a flower growing close to the ground, under the bushes, which was truly astonishing. My first impulse was to cut it up and to carry it to the hut: I therefore seized the Malay's parang, (a sort of instrument like a woodman's chopping hook,) and finding that it sprang from a small root, which ran horizontally, about as large as two fingers,) I soon detached it, and removed it to our hut. To tell you the truth, had I been alone, and had there been no witnesses, I should, I think, have been fearful of mentioning the dimensions of this flower, so much does it exceed every flower I have ever seen or heard of; but I had Sir Stamford and Lady Raffles with me, and Mr. Palsgrave, who though equally astonished with myself, yet are able to testify as to the truth.

"The whole flower was of a very thick substance; the petals and nectary being in few places less than a quarter of an inch thick, and in some places three quarters of inch: the substance of it was very succulent. When I first saw it, a swarm of flies were hovering over the mouth of the nectary, and apparently laying their eggs in the substance of it. It had precisely the smell of tainted beef.

"Now for the dimensions, which are the most astonishing part of the flower. It measured *a full yard across*; the petals being twelve inches high, and a foot apart from each other. The nectarium, in the opinion of us all, would hold twelve pints; and the weight of this prodigy we calculated to be fifteen pounds."

ART. LXX.—*Anniversary Proceedings of the Horticultural Society of Charleston, South-Carolina.*

The following Report was submitted, and concurred in by the Society:—

The Committee of the *Horticultural Society*, whose duty it is to visit the gardens in and about the city, and to examine the several fruits, vegetables and flowers, which may be presented to them for premiums, in accordance with a resolution of the Society, have performed the agreeable and very pleasing duty assigned them, and beg leave to report, that they visited the garden of Mr. Thomas Bennett, and found it in an highly improved state, and a great and beautiful variety of exotics carefully and successfully cultivated. They found that Mr. Bennett had succeeding in raising and blenching the Sea Kale, a very delicate vegetable, which has lately been introduced into this State, and which his success in this instance, will, it is hoped, render of general use.

Among the exotic shrubs and flowers, they observed the *Euphorbia Poinsetta*, four varieties of *Erathayna Christigali*; very large and fine specimen of the *Ficus*, including the *Australia*, *Religiosa* and *Elastica*, several beautiful *Cignonias*, among which were remarked the handsome *Capensis* and *Josminifolium*. The *Thunbergia Adorata*, and three specimens of *Hybiscus Chinen-sis*, were in full bloom, of which the *variegata* appeared the most beautiful. A large *Broumelia* was seen at the season of its bloom, the first probably that has flowered in Carolina, and was pronounced a highly ornamental bulb. The attention of the

Committee was further directed to the *Calceolaria Augustifolia*, the *Kennodea Rubicunda*, *Glycene Sinensis*, and to a large bed of the beautiful Creeper lately introduced; the *Verbena Melindris*, which, together with upwards of one hundred and fifty varieties of Roses and one hundred Dahlias, and large beds of Anemones, and the most beautiful Ranunculuses, presented a most delightful and gratifying sight to the Committee. They agreed unanimously, in awarding the Silver Medal to Miss Stone, for the best show of Ranunculuses, and another for the greatest variety of Roses.

Mr. Lucas' garden appeared to the Committee to exhibit great taste in the distribution of the grounds, and that both skill and care were displayed in their cultivation. The show of Ranunculuses yielded only to those in Mr. Bennett's garden, and the Tulips and Hyacinths were splendid. Both these gentlemen have large conservatories to preserve delicate exotics during the winter; and Mr. Bennett's collection of the varieties of Cactus is numerous and rare.

Miss Merchant's garden, in the immediate vicinity, partook of the same neatness, elegance and order which distinguished those just described; with a fine collection of native plants, the Committee observed a very fine bed of Tulips, some beautiful Hyacinths, and a fine specimen of *Azalia Coccinea*.

The garden of Mr. James Legare, amidst a choice collection of plants and flowers, presented the finest show of Tulips the Committee have seen this year, and they accordingly awarded to this gentleman the Silver Medal destined to that object. They observed in this garden, some fine vegetables, and the specimens of Silver Onions and Parsnips presented to their inspection, were of an excellent quality, and the Committee recommend that a Silver Medal be given to Mr. Legare, for the best Beets produced to them.

In Mrs. Davis' extensive and well cultivated garden, the Committee particularly observed a fine plant of the Jessamine *Trinervium*, a large and flourishing Sago Palm, and a bed of Hyacinths, which they thought deserved the Silver Medal, and it was accordingly awarded to Mrs. Davis.

Mr. Michel, already so advantageously known as a successful cultivator of vegetables, fruits and flowers, offered specimens of Quinces and Apples, which were pronounced the best exhibited, and deserving Silver Medals. His Strawberries were the largest and best and commanded the unanimous suffrage of the Committee. They recommend, therefore, that the Medal destined for this purpose be awarded to Mr. Michel. The Cherries produced by this gentleman, merit particular notice, as they shew that this delicious fruit may be successfully cultivated here. Mr. Michel not only deserves the Medal, but the thanks of the Society and the community, for the skill and persevering industry he

has displayed in the cultivation of varieties of fruits. The artichokes from this garden were deemed the best, and deserving the Medal, although those from the garden of Mr. Joshua W. Toomer, Mr. Francis Lance, and Mr. J. Winthrop, were likewise excellent. Those from Mr. Toomer's gardens were remarkable for the production of numerous heads from each root. If the rule of the Society had permitted the distribution of two Medals for the same vegetable, another Medal for Artichokes would have been awarded to Mr. Toomer. Mr. Michel's garden contains likewise a great number of beautiful Roses. The Moss Roses, of which there are nearly one hundred plants, bear the largest and finest flowers, and in the greatest profusion the Committee have ever seen here or elsewhere, and a large collection of West-India plants were found in a flourishing condition.

The garden of Mr. James Nicholson, which the Committee visited frequently, is well worthy the attention of the community. This gentleman is entitled to the thanks of the Society, for his liberality in bringing into the country so many fine specimens of exotic plants and flowers, and for his persevering industry in rearing and acclimatizing them. Both the Lauries Camphora, and the Cork Tree, it is supposed, by Michaux, will succeed in this climate, and become valuable acquisitions to our agriculture; Mr. Nicholson has introduced these plants into his garden, and so far cultivated them. His Camelias are the largest and finest cultivated in the open air in this neighbourhood, and this successful experiment will, it is hoped, be the precursor of their more general cultivation in Charleston. In common with all the Japan plants, they will bear the winter of our climate without shelter; but have not been long enough cultivated in the open air to have changed their habit of flowering in the months of December and January, which are those of midsummer in the Southern hemisphere. The flowers, therefore, are still liable to be blighted by a severe frost that some times disfigures the plant, though it does not injure it essentially.

Mr. Nicholson's garden, besides those already enumerated, contains many tropical and other plants, some beautiful Tulips, Anemonies, Ranunculus and Hyacinths, and above all, a great variety of remarkably fine Dahlias; they appeared to the Committee the choicest and most beautiful collection of this favourite flower ever exhibited in Carolina; and they unanimously awarded the Silver Medal for the finest show of Dahlias to Mr. Nicholson.

The Society destined a Medal for the finest seedling Dahlias, which, at the season when the Committee visited the gardens would have been justly bestowed on Mr. Nicholson; but after mature deliberation, it was deemed most proper to postpone the award of this Medal until the ensuing season, when it is hoped there will be a greater competition for it.

In the garden of Mrs. William Johnson, the Committee observed a fine collection of native and exotic plants in very excellent order. The *Bigonia Grandiflora* and the *Hoya-Carnosa*, both in full bloom, covered with their large and beautiful flowers, were the finest plants of the kind brought to the notice of the Committee; and among a great variety of choice plants and flowers, the Committee regarded the Carnations superior to any yet exhibited to the Society, and accordingly awarded the premium to Mrs. Johnson.

Dr. Dickson exhibited to the Committee some very fine White Moss Roses, which are as yet a rare flower in this State. The Committee trust that this successful experiment will induce other horticulturists to cultivate this beautiful variety of Rose.

The garden of Mr. Patterson exhibited the taste and skill of the ladies who devote their time and attention to its cultivation. The tree Peony, the *Rhododendron*, so rarely brought to perfection in this climate, and the varieties of *Azalias*, attracted the favourable notice of the Committee, and they awarded the premium for the best indigenous plant to Miss Elizabeth Patterson.

The garden cultivated by Mrs. Wagner, was found by the Committee in a high state of improvement, and of great beauty, containing a great variety of flowering Shrubs, and a numerous and choice collection of *Geraniums*.

The Committee saw in Mrs. Cochran's garden, an extensive collection of Roses, and many varieties of the finest *Amarylles*.

To Mr. Naser the Committee awarded the premium of a Silver Medal, for the finest Pinks exhibited this season.

Mr. Landreth exhibited several very fine Dahlias; some of the variety, called the Globe Dahlia, which were quite perfect, and very beautiful.

Mr. Dupont has shewn himself to be a very skillful and successful horticulturist. His garden presents a great variety of ornamental exotics, in high preservation and beauty. The Committee particularly remarked a fine plant of the *Alpinea Nutans*, and several beautiful varieties of the *Plumeria*, and of the *Tuchsia*, which have proved so very difficult to rear in this climate.

Mrs. Schreiber, one of the very few persons in this city or vicinity, who cultivate plants or flowers for sale, deserves the patronage of a liberal public for the skill and persevering industry she has displayed in the cultivation of *Geraniums* and other green-house plants.

The Committee invite the citizens generally to visit the establishment of Mrs. Schreiber, in Society-street, where they will find a display of shrubs and flowers, to gratify the eye and taste of those who are fond of the simple or gorgeous beauties of the parterre and green-house. Mrs. Schreiber, by the unanimous vote of the Committee, will receive the Silver Medal, for the most beautiful exotic. Her fine plant of the *Erythrina Christa-*

gali having entitled her in their opinion to this reward from the Society.

Mr. Noisette, who has been settled in this country for many years, and been long advantageously known as a distinguished botanist, as well a most successful horticulturist, continues to cultivate and improve his garden in the culture of the Tea Plant, in a manner to place it beyond all doubt, that whenever our population shall be so far advanced, as to render manual labour cheaper and man more provident, this valuable article of general consumption may be produced abundantly in this country: and, together with the Olive, the Vine, the Cork Tree, the Camphor Laurel, the New-Zealand Flax, (*Phormium Tenax*), and a great number of other useful plants of China, the East Indies, and the South of Europe, may be introduced into general cultivation in Carolina, and form valuable additions to the staple articles of her products.

Mr. Noisette has reared, for sale, a choice and numerous collection of indigenous and exotic plants, which the Committee have not space to enumerate, and which they recommend to the Society and to the public to visit and examine. They recommend that a Silver Medal be awarded him for the finest and largest *Camelia Japonica*; and another for a beautiful plant of the *Hacmanthus Vuniceus*.

The Committee further recommend that a Silver Medal be given to Mr. Edward W. Bounetheau, for the finest Leeks, and another to the same gentleman for the best Salsafy.

To Mr. Joseph A. Winthrop, the Committee awarded the Silver Medal, for the best Swiss Chard, and another for the finest Parsnips, and a third for the finest red Onions, raised from the seed of the Madeira Onion, sown in the fall. This fine vegetable, so vastly superior in size and flavour to the common Onion, it is now hoped, will be more generally cultivated.

The finest Peaches produced the last summer, were those raised in the gardens of Mrs. Richard Howard, Mr. D. A. Ring, and Mr. Henry Horlbeck. Among these it appeared to the Committee that the specimens produced by Mr. Horlbeck, were the finest, and to him they awarded the Medal. Dr. Samuel Wilson lately sent to the Committee some very fine Peaches, produced this year, which were worthy of notice, both from the size and flavour, as well as from their early production.

The Committee, after full examination and impartial comparison, awarded the premium for the best Nectarine to Dr. Moultrie; and to Mr. Parkinson for the finest Grapes.

All which is respectfully submitted, by

J. R. POINSETT, *Chairman.*

PART III.

MISCELLANEOUS INTELLIGENCE.

Horticultural Society.—At the anniversary meeting of the Society, an Address was delivered to a large and respectable assemblage of ladies and gentlemen, by Dr. Henry R. Frost, a member; after which, the Report of the Standing Committee was read, and the Medals delivered by the President. The Society afterwards proceeded to the election of Officers for the ensuing year, when the following gentlemen were chosen :

NATHANIEL HEYWARD, *President.*

JOEL R. POINSETT, *Vice-President.*

DR. E. HORLBECK, *Corresponding Secretary.*

JOSEPH F. O'HEAR, *Recording Secretary.*

JAMES LEGARE, *Treasurer.*

Standing Committee.—Rev. Mr. Bachman, Dr. Joseph Johnson, Judge Colcock, J. A. Winthrop, Dr. Samuel Wilson, J. Michel, J. D. Legare, and the Officers of the Society *ex-officio*.

JOEL R. POINSETT, *Orator for the next Anniversary.*

Apples.—We are informed that the farmers in many towns laid up last fall great quantities of apples, which they are feeding out to their cattle instead of potatoes. Some farmers in Middle Granville, have three or four hundred bushels of apples in their cellars. A farmer in Blandford says cows fed with apples in the autumn will give milk as abundantly as in June, and that he cannot perceive any difference in the beneficial effects of sour and sweet apples. Another in East Granville, says he can make as good pork and beef with apples as potatoes. It is the opinion of many that a bushel of the former nearly equals in value a bushel of the latter. Such facts, we think, are of great value to the farmer; if he can convert his apples into beef and pork, or by them increase the products of the dairy, then a way is opened for the conversion of fruits into money without going through with the longer and more tedious process of converting them into cider, and then into brandy, and that into money. Again if pork, beef, butter and cheese can be made from apples, they will yield a greater profit to the farmer than if he make these articles by the aid of potatoes or grain since they cost but little.—*Westfield Journal.*

Fish.—Mr. Holmes—Perhaps it is not generally known that many kinds of fish at present found in salt water, may be taken from thence to fresh water, and that they will not deteriorate in flavour. They may thus be transplanted into our fresh water ponds, where they will speedily multiply and become not only gratifying to the palate, but actually a source of profit.

Experiments have been made in Europe and in this country; and the fact is there rendered beyond dispute that Plaice, Flounders, Bass, Cod, Mackarel, and Eels, and to this list may be added crabs, oysters, muscles, shrimps, all

live and do well in fresh water. Many of them, when thus transferred, improve in size and delicacy.

The expense of supplying a pond with them is a mere trifle, and what lover of fresh fish will not be willing to cast in his mite to effect the stocking any pond near him with such inhabitants.

A LOVER OF GOOD THINGS.—*Maine Far.*

Fall Transplanting.—As soon as a plant has so far completed its summer growth, or matured its wood, as to begin to drop its leaves, it may be transplanted with safety. Transplanting in the fall, in preference to that in the spring, has many experienced and decided advocates. No person who wishes to set out plants should neglect to do it in the fall if he has the means and the time. If delayed until spring, it is often put off for years. More depends on the care in taking up the plants than on the season. Last spring we took up an apricot tree, 15 to 18 feet high, in full bloom, and carried it half a mile. It ripened fruit, and showed no indications of having received injury. On taking it up, the roots were immediately put into a large tub, and covered with water and soil. Whether transplanted in the fall or spring, the fibrous roots should be exposed to the air as little as possible. When a plant is in foliage, or in a growing state, it is curious to see how soon and how greatly it is affected by an exposure of the roots to the sun or air the shortest possible time. A fish out of water, or a person immersed in it, is not more sensitive.—*N. Y. Farmer.*

Cure for Gangrene.—In an account of a fight between a party of Waccos and Tawackanies, Indians, and a small party of Americans, in Texas, in November, 1831, recently published in the Philadelphia Post, we find the following singular method of curing the leg of one of the party, which was shattered during the action by a musket ball. It was lucky for David Buchanan that no surgeon attended the party, or he would have been 'a peg shorter' all his days:

"David Buchanan's wounded leg here mortified, and having no surgical instruments, or medicine of any kind, not even a dose of salts, we boiled some live oak bark very strong, and thickened it with pounded charcoal and Indian meal, made a poultice of it, and tied it round his leg, over which we sewed a buffalo skin, and travelled along five days without looking at it; when it was opened the mortified parts had all dropped off, and it was in a fair way for healing, which it finally did, and his leg is as well now as ever it was."

A New Wheat.—Sir Robert Ker Porter, British Consul at Caraccas, has forwarded to England a small supply of the Victoria wheat so much extolled by Humboldt for its productiveness and for the short period required for its growth. According to Humboldt, the produce of this wheat at La Victoria, in South-America, (whence it takes its name) is from 2,160 to 2,560lbs. per English acre, while in France the produce of wheat from an equal space does not exceed 800 to 960lbs. Should it retain the property of early maturity, for which it is remarkable in the other hemisphere, a crop of Victoria wheat, sown on the 15th of February, would be ready for the sickle on the 1st of May; and if threshed and re-sown on the 15th of May, a second crop might be reaped on the 28th of July.

To Young Hop Growers.—The most common fault with hops at this time of inspection is their want of strength. In most cases, when hops are marked down by the inspector, the difficulty lies not so much in a bad flavour as in the want of a sufficient quantity of that aromatic fragrance peculiar to this vegetable, and which is a sure sign of strength and excellence. Hops deficient in strength are, when rubbed in the hand, generally accompanied with a dry, chaffy appearance. The volatile oil, which appears to be the last thing

that enters the ovary (or fruit,) and which yields the fine flavour, and without which the hop is good for nothing, is not there in any considerable quantity. This deficiency in oil, and consequent deficiency in strength and smell, may arise from three causes. The first is *picking too early*, and before the hop is matured or ripe. Hops picked as soon as they are grown are worth nothing. At that state, instead of the fruit being saturated with its own volatile oil, the first sort of hops must be, that oil is only beginning to be elaborated from the sap. The second cause of the want of strength arises from *over drying*. Hops that are perfectly dry and mature, and when picked from the poles are of the first quality, are sometimes dried to seconds or refuse. In that case the oil is dissipated in the air by heat. I am satisfied of this, for I have seen the operation performed in my own hophouse more than once. I have seen good hops dried until the oil was chiefly expelled, and they would rub into chaff and yield but little fragrance. This may be done without burning them, or a change of colour. The third cause of weak hops may sometimes, though I think, rarely, arise from *nature*. I saw a few bales last year grown by some of our most judicious and experienced planters, which were feeble; yet in all probability, were picked at the right time and cured in the best style. If in some few cases the deficiency of strength arises from causes beyond the control of man, yet generally the planter need not look beyond himself for the ground work of seconds and refuse. If hops be kilned scantily, care should be taken to shovel over the heap once a day for a few days, and occasionally to examine them down to the bottom. In 1832, hops picked the second week, i. e. after the 10th of September, were better than those of the first week. Hops may be bad, also, from dirty picking, and various other causes. In brief, *take care not to pick too early, nor dry too much.*—*Gen. Far.*

Rats in Jamaica.—In no country is there a creature so destructive of property as the rats in Jamaica; their ravages are inconceivable. One year with another, it is supposed that they destroy at least about a twentieth part of the sugar-canes throughout the island, amounting to little short of a half million of dollars currency per annum. The sugar cane is their favourite food; but they also prey upon the Indian corn, on all the fruits that are accessible to them, and on many of the roots. Some idea will be formed of the immense swarms of these destructive animals that infest these islands, from the fact, that on a single plantation 38,000 were destroyed in one year.

Curious case of Farriery.—Some time ago a valuable mare, belonging to Mr. C. Ligny, of Baylin, was gored by a bull, and the entrails protruded through the wound. As there appeared no possible remedy, the animal was left in the field to die—when a neighbouring man named Moran undertook to cure her. After returning the entrails and sewing up the wound, he procured a large piece of sheet-lead, places it over the spot, and afterwards drew the skin across it and sewed it up. After an interval of some days, he again ripped the skin open and removed the lead, when the wound appeared completely healed. The skin was a second time sewed up: and in less than a month after, the animal was able to plough as well as ever.—*Eng. paper.*

On rendering Timber more durable.—We copy from the Rail-Road Journal another paragraph on the preservative quality of lime when applied to timber in damp places. The writer is said to be "an Engineer of great experience."

"I am induced to communicate a fact corroborative of the opinion of your correspondent G. that lime is a preserver of timber. Some fifteen years ago, a friend of mine removed a decayed mill trunk in order to replace it with a new one. The trunk had been laid under ground: and when it was covered with earth, a few scattered lumps of lime were accidentally thrown upon it. On its removal, it was discovered that every part of the wood which was in contact with lime was as perfectly sound as when it was first laid, whilst every other part was more or less decayed. Indeed those parts exhibited a freshness and soundness which was truly remarkable."

It has been mentioned to us that some farmers in Bucks county, Pennsylvania, have soaked the lower parts of their posts in vats containing lime water, previous to their being set or planted; but we have no further information on the subject: and we shall be much obliged to any person in that quarter or elsewhere who will send us a statement of such experiments.

To obtain large Heads on Roses.—In the Horticultural Register we find a method described to obtain large heads on standard Roses by inarching in one season.

So soon as the plants indicate the circulation of sap, I begin to take off the head of the stock at the proposed height, bending it so that the plant designed to form a head is brought close to the top of the stock. I pare from the stem two or three inches of the bark, with a portion of the wood, at the most convenient part for forming the junction, after which the stock is neatly made to correspond, and in such a manner that the part where the union is intended to take place is very little increased in size. Tonguing should be avoided, since it offers no advantage, and often serves to weaken the union. They should be bound together with tape or good matting, and covered with a little moss which should be kept damp. Should the stock be very tall, or weakly, the union of the parts would be strengthened and accelerated by making a small slit in the stock, and causing it to dip into the ground, or in a pot of earth placed for the purpose. The slit will heal, and throw out roots, which will support the head considerably; and after the head and stock are united, they will be pared off without the place being seen or the least injury being done.

A Chinese Cow.—It is mentioned in an English publication, that a Chinese Cow, which had been imported into England, gives milk so very rich, that one pint of it gives as much butter (4 ounces) as seven pints of a Sussex cow's milk, both churned immediately from the cow, without being set for cream. The Chinese cow is small, the beef is superior in fatness, and in butter the superiority is as 1400lbs. to 200lbs. from a very good country cow. The New-England Farmer recommend the importation of this valuable breed into America.

Prepared Ox-Gall for taking out spots.—Boil together one quart of ox-gall, and four ounces of pulverized alum. After several boilings, add four ounces of common salt. Let the liquor settle, and then decant and preserve it in well-stopped bottles. It may be rendered aromatic, by adding a little of the distilled essence of lemon, which also augments the properties of the preparation.

To measure a Corn-House filled with Corn.—Corn-house 20 feet long,
Multiply by 10 feet wide,

200

Multiply by 6 feet deep,

Deduct 1-5) 1200

Difference between square and cubic measure 240 subtract,

Divide for Cobs $\frac{1}{2}$) 960

Leaves 480 bushels of corn,
the contents of a corn-house 20 feet long, 10 feet wide, and 6 feet deep, filled
with prime unshelled corn.—[Communicated.]